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APPENDIX TO THE JOURNALS

OF THE

SENATE AND ASSEMBLY

OF THE

TWENTY-FIFTH SESSION

OF THE

LEGISLATURE OF THE STATE OF CALIFORNIA.

Volume IV.

SACRAMENTO:
STATE OFFICE, ... JAMES J. AYERS, SUPT. STATE PRINTING.
1883.

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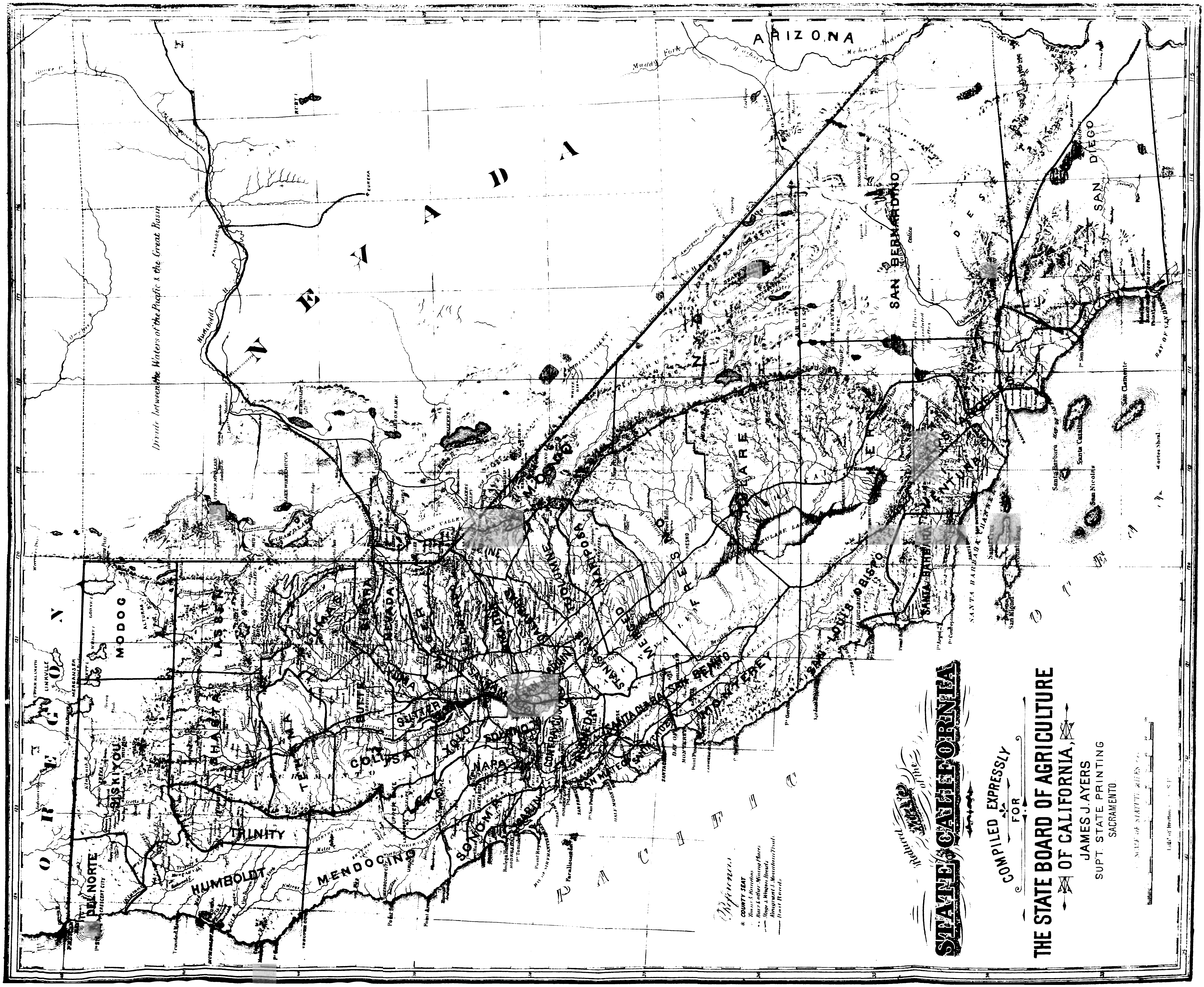
Reduced Map of the State of California
Compiled expressly for
The State Board of Agriculture of California,
James J. Ayers
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ARIZONA
OREGON
PACIFIC OCEAN
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Santa Barbara
San Clemente
San Nicolas
Farallones Is.
Point Reyes
Point Arena
Bay of San Diego

TRANSACTIONS

OF THE

CALIFORNIA

STATE AGRICULTURAL SOCIETY

During the Year 1882.

SACRAMENTO:
STATE OFFICE.........JAMES J. AYERS, SUPT. STATE PRINTING.
1883.

STATE BOARD OF AGRICULTURE FOR 1882.

DIRECTORS.

JOHN BOGGS	Princeton, Colusa County
C. M. CHASE	San Francisco
H. M. LA RUE	Sacramento
CHRISTOPHER GREEN	Sacramento
JESSE D. CARR	Gabilan, Monterey County
J. McM. SHAFTER	San Francisco
G. W. HANCOCK	Sacramento
R. H. NEWTON	Woodland, Yolo County
L. J. ROSE	San Gabriel, Los Angeles County
P. A. FINIGAN	San Francisco
W. P. COLEMAN	Sacramento
L. U. SHIPPEE	Stockton

OFFICERS OF THE BOARD.

PRESIDENT,	
H. M. LA RUE	Sacramento
SECRETARY,	
EDWIN F. SMITH	Sacramento
TREASURER,	
L. A. UPSON	Sacramento
GENERAL SUPERINTENDENT OF PARK,	
CHRISTOPHER GREEN	Sacramento
GENERAL SUPERINTENDENT OF PAVILION,	
W. P. COLEMAN	Sacramento

STATE AGRICULTURAL SOCIETY.

AN ACT

TO PROVIDE FOR THE MANAGEMENT AND CONTROL OF THE STATE AGRICULTURAL SOCIETY BY THE STATE.

[Approved April 15, 1880.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The State Agricultural Society is hereby declared to be a State institution.

SEC. 2. Within ten days after the passage of this Act, the Governor shall appoint twelve resident citizens of the State, who shall, when organized, constitute a State Board of Agriculture, who shall, except as hereinafter provided, hold office for the term of four years, and until their successors are appointed and qualified. Vacancies occurring from any cause in the Board shall be filled by appointment of the Governor for the unexpired term of the office vacated.

SEC. 3. Within ten days after their appointment, the persons so appointed shall qualify, as required by the Constitution, and shall meet at the office of the State Agricultural Society and organize by the election of one of their number as President of the Board and said Society, who shall hold said office of President for the term of one year, and until his successor is elected and qualified. The Board shall also elect a Secretary and Treasurer, not of their number, who shall each hold office at the discretion of the Board.

SEC. 4. At the same meeting, the members of the Board shall, by lot or otherwise, classify themselves into four classes of three members each. The terms of office of the first class shall expire at the end of the first fiscal year; of the second class, of the second year; of the third class, of the third year; of the fourth class, at the end of the full term of four years. The fiscal year shall be from the first of February to the first of February.

SEC. 5. The State Board of Agriculture shall be charged with the exclusive management and control of the State Agricultural Society as a State institution; shall have possession and care of its property, and be intrusted with the direction of its entire business and financial affairs. They shall define the duties of the Secretary and Treasurer, fix their bonds and compensation, and shall have power to make all necessary changes in the Constitution and rules of the Society, to adapt the same to the provisions of this Act, and to the management of the Society, its meetings and exhibitions. They shall provide for an annual Fair or exhibition by the Society of all the industries and industrial products of the State, at the City of Sacramento; *provided*, that in no event shall the State be liable for any premium awarded or debt created by said Board of Agriculture.

SEC. 6. The Board shall have power to appoint all necessary Marshals and police to keep order and preserve peace at the annual Fairs of the Society; and the officers so appointed shall be vested with the same authority for the preservation of order and peace, on the grounds and in the buildings of the Society, that executive peace officers are vested with by law.

SEC. 7. Said Board shall use all suitable means to collect and disseminate all kinds of information calculated to educate and benefit the industrial classes, develop the resources, and advance the material interests of the State, and shall, on or before the first day of February of each year, report to the Governor a full and detailed account of their transactions, statistics, and information gained, and also a full financial statement of all funds received and disbursed. They shall also make such suggestions and recommendations as experience and good policy may dictate for the improvement and advancement of the agricultural and kindred industries.

SEC. 8. The Superintendent of State Printing shall, each year, print and bind in cloth four thousand volumes of said transactions, and deliver the same to said Board of Agriculture for distribution and exchange. He shall also do such job printing as said Board may require to carry out the provisions of this Act.

SEC. 9. The Directors or Boards of Managers of each county and district agricultural society or association, and of county, district, or State horticultural and stock breeding association or society, organized and acting under the laws of this State, shall report annually, on or before the first day of April, to the State Board of Agriculture, the name and Post Office address of each officer of such society or association; and, on or before the first day of December, shall report to said Board of Agriculture the transactions of said society, including the premiums offered, the list of stock and articles exhibited, and the premiums paid; the amount of receipts and expenditures for the year, the new industries inaugurated, and any and all facts and statistics showing the development and extent of the industries, products, and resources of the county or district embraced within the management of such society or association; *provided*, that the provisions of this Act shall not apply to any Board of Commissioners or other body organized under the laws of this State, the object of which is to promote vinicultural industries, unless such Board or body shall voluntarily request the privilege of making such reports as are called for by this Act, in which case such Board or body shall enjoy equal privileges as are accorded to other institutions devoted to agriculture.

SEC. 10. To facilitate such reports, the State Board of Agriculture shall have prepared, and shall furnish such societies with necessary schedules and blanks for such reports; and such State Board shall include such reports from societies and associations, or so much thereof as they may deem advisable, in their report to the Governor.

SEC. 11. When said State Board of Agriculture shall have been organized and classified as provided herein, the Secretary of the Board shall report such organization and classification to the Governor. He shall also report any vacancy that may occur in said Board at any time.

SEC. 12. All laws and parts of laws in conflict with this Act are hereby repealed.

SEC. 13. This Act shall take effect and be in force from and after its passage.

CONSTITUTION

OF THE

CALIFORNIA STATE AGRICULTURAL SOCIETY.

[Revised and adopted by the State Board of Agriculture, May 18, 1880.]

NAME.

SECTION 1. This Society shall be called "The California State Agricultural Society."

OBJECT.

SEC. 2. It shall be the object of this Society to encourage the cultivation of the soil, and the general development of all the agricultural resources of this State.

SEC. 3. To foster every branch of mechanical and household arts calculated to increase the happiness of home life.

SEC. 4. To extend and facilitate the various branches of mining and mining interests.

MEMBERSHIP.

SEC. 5. *Annual Members.*—Any person who shall pay into the funds of this Society the sum of five dollars, may become a member of the same; such membership to expire at the end of the current fiscal year.

SEC. 6. *Life Members.*—Any person may become a member for life by the payment of fifty dollars; or, if already a member, by the payment of forty-five dollars, or by serving a full term as a member of the State Board of Agriculture, and shall thereafter be exempt from all dues and assessments.

SEC. 7. *Honorary and Corresponding Members.*—Any person whom the Board shall propose may be elected an honorary or corresponding member, and shall enjoy, free of charge, all the privileges of the Society, except voting and holding office.

SEC. 8. *Privileges of Members.*—Any citizen of this State, being a member of this Society, shall be eligible to office, entitled to vote, and enjoy the free use of the library, under the rules of the same, and have free admission, accompanied by his wife and minor children, to all the exhibitions of the Society, and shall be permitted to compete for premiums in any or all departments.

SEC. 9. *Expulsion of Members.*—Any member who shall present for exhibition any article or animal which he is not entitled by the rules of the Society to exhibit, or who shall attempt to deceive, or be guilty of a breach of good faith toward the Society, may be expelled by a vote of two thirds of the members present at any meeting of the Board; *provided, always,* that no member shall be expelled unless written notice of the alleged offense shall have been served on him, or left at his usual place of residence at least twenty days previous to the action.

OFFICERS.

SEC. 10. The officers of this Society shall consist of twelve Directors, to be appointed by the Governor, who shall constitute a State Board of Agriculture, seven of whom shall constitute a quorum. The Board shall be charged with the exclusive management and control of the State Agricultural Society as a State institution; shall have possession and care of its property, and be intrusted with the direction of its entire business and financial affairs; shall have power to make all necessary changes in the Constitution and rules of the Society; shall provide for an annual Fair or exhibition by the Society of all the industries and industrial products of the State, at the City of Sacramento, and such other exhibition as they may deem important. They shall elect one of their members as President of the Board and Society, and a Treasurer and Secretary, not members of the Board. They may also appoint, annually, as officers of the Board, a chemist, a botanist, a mineralogist, a geologist, a metallurgist, an ornithologist, and an entomologist, and define the duties of each. They may appoint such committees on the various departments of agriculture, mining, and manufactures, either generally or for specific purposes, as they may deem important for the best interests of the State, and require such committees to report the results of their investigations to the Board at such times as may be named by them.

Sec. 11. *Duties of President.*—The President shall preside at all meetings of the Board and of the Society; shall have power to call special meetings of the Board when necessary, and at the written request of ten members, may call extra meetings of the Society; shall appoint all meetings not otherwise provided for; and shall sign all financial and official documents emanating from the Society, and not otherwise provided for. In the absence of the President from any meeting of the Board or Society, any Director may be called to the chair, and during such meeting, and for the completion of any business transacted or ordered at the same, shall have the same powers as the President.

Sec. 12. *Duties of Secretary.*—The Secretary shall conduct the correspondence of the Board or Society, keeping copies of all important letters written in the name or on behalf of the Board or Society, holding the same free to the inspection of any member of the Board or Society, at any regular meeting of the same. He shall also receive and file all letters addressed to the Board or Society, holding the same subject to the Board of Directors. He shall attend all meetings of the Society and the Board, keeping a full record of the proceedings of each in a book for that purpose. He shall prepare and publish all notices of meetings, shall keep a roll of all standing committees, and call the same (noticing absences) whenever desired to do so by the Chair; shall sign all certificates of honorary and corresponding and life memberships, and forward the same to those entitled to receive them. He shall keep in a book, prepared for that purpose, the names and address of every member; shall prepare and sign all gratuitous or complimentary cards or tickets of admission; shall countersign all diplomas, certificates of merit, etc., awarded by the Board, and forward the same to their respective claimants. He shall be ex officio Librarian; shall keep the seal, and all the plates, dies, engravings, etc., belonging to the Society, and shall cause to be struck therefrom such medals and impressions as may, from time to time, be required. He shall have charge of all specimens, models, plants, seeds, books, etc., and arrange, prepare, or distribute the same under the direction of the Board. He shall prepare all reports to be made by the Board to the Society, and to the State. He shall receive all moneys due or payable to the Society, and pay the same to the Treasurer, taking his receipt therefor; shall hold all bonds filed by officers of the Society for the faithful performance of their duty, and all vouchers for every class of expenditure. He shall countersign all drafts ordered by the Board, and all certificates of annual and life membership, and keep an account of the same in a book, as they are issued, and shall, in December of each year, prepare a tabular statement of the receipts and expenditures of the Board according to the law organizing the same.

Sec. 13. *Duties of the Treasurer.*—The Treasurer shall receipt for all funds at the hands of the Secretary, and shall disburse the same only on the order of the Board, attested by the President and the Secretary. He shall also hold in trust all certificates of stock, bonds, notes, deeds, or other evidences of debt or possession belonging to the Society, and shall transfer, invest, or dispose of the same only by direction of the Board. He shall file with the Secretary a bond for the faithful performance of his duties; said bond to be approved by the Board, and shall, at the annual meeting, make to the Society a detailed report of all his transactions.

STANDING COMMITTEES.

Sec. 14. *Committee of Finance.*—The Committee of Finance shall consist of five members of the Board, the President being one, whose duty it shall be to audit the Secretary and Treasurer's accounts, to examine and approve all bills before they are paid, to have general supervision of the finances of the Society, and to report their transactions and financial condition of the Society in full to the Board whenever called on so to do.

Sec. 15. *Library Committee.*—The Library Committee shall consist of four members of the Board and the Secretary, whose duty it shall be to have the general supervision of the library and cabinet, to make all necessary rules and regulations for the government of the same (said rules and regulations being subject to the approval of the Board), to suggest such means for the safe keeping and enlargement of both the library and cabinet as they may deem expedient, and to make a full report of their transactions, together with the state of the department under their charge, at each annual meeting.

Sec. 16. *Visiting Committee.*—The Visiting Committee, to be appointed by the Board from their own number, shall visit and examine all farms, orchards, vineyards, nurseries, field crops, irrigation works, agricultural machine works, agricultural machinery in operation, etc., which may be entered for competition, and which require examination at other times and places than the annual Fair; to award premiums for the same according to the schedule, and recommend such gratuities as they may deem proper, and make a full report to the Board at least one day previous to the annual Fair.

Sec. 17. *Printing and Publication Committee.*—The Committee on Printing and Publication shall consist of five (the President and Secretary being two), whose duty it shall be to contract for and superintend, under the direction of the Board, all printing and publishing necessary for the Society.

OFFICE AND ROOMS.

Sec. 18. The office, rooms, library, and cabinet of the Board and Society shall be permanently located at the Capital of the State.

DISTRICT AGRICULTURAL ASSOCIATIONS.

AN ACT

TO FORM AGRICULTURAL DISTRICTS, TO PROVIDE FOR THE ORGANIZATION OF AGRICULTURAL ASSOCIATIONS THEREIN, AND FOR THE MANAGEMENT AND CONTROL OF THE SAME BY THE STATE.

[Approved April 15, 1880.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. The Counties of Alameda, Contra Costa, and San Francisco shall constitute Agricultural District No. 1.

Sec. 2. The Counties of San Joaquin, Calaveras, Fresno, Kern, Merced, Mariposa, Stanislaus, Tulare, and Tuolumne shall constitute Agricultural District No. 2.

Sec. 3. The Counties of Sutter, Yuba, Butte, Colusa, Tehama, Yolo, and Sacramento shall constitute Agricultural District No. 3.

Sec. 4. The Counties of Sonoma, Marin, Solano, Napa, and Lake shall constitute Agricultural District No. 4.

Sec. 5. The Counties of Santa Clara and San Mateo shall constitute Agricultural District No. 5.

Sec. 6. The Counties of Los Angeles, San Diego, San Bernardino, Santa Barbara, Ventura, and Inyo shall constitute Agricultural District No. 6.

Sec. 7. The Counties of Monterey, Santa Cruz, San Luis Obispo, and San Benito shall constitute Agricultural District No. 7.

Sec. 8. The Counties of Nevada, Placer, El Dorado, Amador, Alpine, and Mono shall constitute Agricultural District No. 8.

Sec. 9. The Counties of Mendocino, Humboldt, and Del Norte shall constitute Agricultural District No. 9.

Sec. 10. The Counties of Siskiyou, Trinity, and Shasta shall constitute Agricultural District No. 10.

Sec. 11. The Counties of Plumas, Lassen, Modoc, and Sierra shall constitute Agricultural District No. 11.

Sec. 12. Any fifty or more persons representing a majority of the counties within any one of the districts above constituted, may form an association for the improvement of the material industries within such district, and when so formed the association shall be known and designated by the name of —— Agricultural Association, and by such name and style shall have perpetual succession, and shall have power and authority to contract and be contracted with, to sue and be sued, to have and use a common seal, to purchase and hold and lease real estate, with such buildings and improvements as may be erected thereon, and may sell and lease and dispose of the same at pleasure. The said real estate shall be used by such association for the purposes of holding exhibitions of horses, cattle, and other stock of the agricultural, horticultural, viticultural, mechanical, manufacturing, and domestic products of such district, with view to the improvement of all the industries in the same.

Sec. 13. The officers of such association shall consist of eight Directors, who shall constitute a District Board of Agriculture for District Number ——, a President, who shall be one of their number, and a Secretary and Treasurer, not of their number.

Sec. 14. Within ten days after the formation of an agricultural association within any of the districts above constituted, in accordance with the provisions of this Act, and notice of such formation to the Governor, the Governor shall appoint eight resident citizens of such districts as members of a District Board of Agriculture for said district, whose term of office shall be four years, except as hereinafter provided.

Sec. 15. Within ten days after their appointment, the persons so appointed shall qualify, as required by the Constitution, and shall meet at a place within the district, and organize by the election of one of their number as President of the Board and Association, who shall hold said office of President one year, and until his successor is elected; they shall also elect a Secretary and Treasurer.

SEC. 16. At the same meeting the members of the Board shall, by lot or otherwise, classify themselves into four classes of two members each. The terms of office of the first class shall expire at the end of the first fiscal year; of the second class, of the second fiscal year; of the third class, of the third fiscal year; and of the fourth class, at the end of the full term of four years. The fiscal year shall be from December first to December first.

SEC. 17. Each association so formed and organized is hereby declared and shall be recognized a State institution, and the Board so appointed and qualified shall have the exclusive control and management of such institution for and in the name of the State, and shall have the possession and care of all the property of the association, and shall fix the terms of office, and the bonds of the Secretary and Treasurer, and determine their salaries and duties. They shall have power to make all necessary by-laws, rules, and regulations for the government of the association and the management of its prudential and financial affairs. They shall provide for an annual Fair or exhibition by the association of all the industries and industrial products in the district, at such time and place as they deem advisable; *provided,* that no District Fair shall be held in any of the districts at the same time of the State Fair; *and provided further,* that the State shall in no event be liable for any premium offered or award, or for any debt contracted by any District Board of Agriculture, or Agricultural Association.

SEC. 18. When any District Board of Agriculture shall have been classified and organized as herein provided, the Secretary of the Board shall report such classification and organization to the State Board of Agriculture; he shall also report the same to the Governor, and shall report any vacancy that may occur in the Board to the Governor, who shall fill the same by appointment for the unexpired term.

SEC. 19. All laws and parts of laws in conflict with this Act are hereby repealed.

SEC. 20. This Act shall take effect from and after its passage.

REPORT.

Office State Board of Agriculture,
Sacramento, February 1, 1883.

His Excellency George Stoneman, *Governor of California:*

Sir: In compliance with the law, the State Board of Agriculture of California presents herewith their annual report for the year eighteen hundred and eighty-two. In presenting this report we feel gratified at the progress made by the Society, and are assured that its usefulness can no longer be doubted. The demand for improved live stock, occasioned by the competitive spirit evinced at our annual exhibitions by breeders, has increased since the organization of this Society from mere naught until we are now looked upon with astonishment, and the highest encomiums are paid us by our Eastern brethren upon the favorable outgrowth of California's breeding establishments. The superior qualities, both as to speed and endurance, of California-bred horses, has awakened a desire among foreign purchasers to obtain them. The demand far exceeds the supply at this time, but we hope in the near future to be able to accommodate all who may desire to purchase. The outlined policy of the Agricultural Societies of this State, in offering large premiums to bring out the speed and endurance of all classes of untried horses, is having the desired effect in developing the most desirable and valuable qualities of this animal. We have improved upon all classes from the "American" horse of twenty years ago, when that class was the only recognized one paramount to the common mustang. We are now able, not only to show the "thoroughbred," but others equally as valuable from a "blood" standpoint. There is the "Norman" and "Percheron," which classes are now bred to an enormous extent. A large per cent of our draft horses are of these popular breeds, and the demand for them has increased so that breeders are turning their attention to the importation of this class. A glance at the entries made at the last Fair by J. B. Haggin in the first department will give you an idea of the numerous classes that are now being bred in this State, nearly all of which were imported by that gentleman with a view of improving the stock, and opening out a larger field which will give California a greater variety for the purchaser to select from than any of our sister States. This interest is young, but is fast developing. The climate being especially adapted for this business, we may hope to see it take the lead in a very short time, when California will be looked upon, as old Kentucky was in her younger days, as the animal-producing State of our Union.

The demand for our improved cattle is also great, and we cannot as yet fully supply the home wants of our small breeders, their desire to improve their herds having grown equally with the supply of the original importers. This interest is also growing, and is aided in every conceivable way by this State Board. Many imagine that there is a great difference in premiums awarded between horses and cattle; it has been the object to as nearly equalize these great interests as the supply would warrant. Upon an examination of our premium lists, it will be seen that the total amount of premiums given to all classes of horses amount in the aggregate to two thousand eight hundred and forty dollars, while those to cattle of all classes are two thousand five hundred and sixty-five dollars, which is but two hundred and seventy-five dollars less than the horses; and taking into consideration the amount of money invested in each, the difference would result more favorably to the cattle-breeders. Many labor under the false impression that too much attention is given to races, while they are more than self-sustaining, and are to a great extent the "pleasure" after the "work" is done. The annual Fair given by this Board is looked upon as a holiday week of recreation and sport by the general public, and this Board has labored to satisfy all. The entire morning and part of the afternoon is devoted to the examination of our agricultural products, our inventions, our machinery and implements, the various breeds of cattle and horses, swine, sheep, poultry, etc., that are exhibited in available places throughout the grounds. Then, after this is done, people naturally wonder what they will do the remainder of the day. The Board have looked out for this contingency, and have provided for their entertainment a more than self-sustaining amusement and interest—an amusement to those who care not for the breeding qualities, and an interest for those engaged in breeding. The stock raiser who desires to combine speed and endurance with other qualities, is here enabled to judge for himself. To show that no money appropriated by the State is used for this, we submit our ledger account on race number five, given at the State Fair, eighteen hundred and eighty-two: Trotting: two-twenty-five class; purse, one thousand two hundred dollars; mile heats, best three in five; seven hundred and twenty dollars to first horse, three hundred and sixty dollars to second, one hundred and twenty dollars to third; entrance ten per cent on amount of purse:

Dr.	
To cash, first money	$720 00
To cash, second money	360 00
To cash, third money	120 00
Total	$1,200 00
Cr.	
By cash received from entries made (nine, at $120 each)	$1,080 00
By balance paid by Society	120 00
Total	$1,200 00

Thus it will be seen that the Society, after offering this twelve hundred dollar purse, is out of pocket only one hundred and twenty dollars, the racing men themselves paying, in the way of entrance money, the remainder. This is taken as an average case. The very next race, eleven entries were received, which more than paid the deficit in the last race. Our detailed statement will show the following comparison respecting the race account:

Dr.		
Added money and purses		$10,650 00
Cr.		
Receipts from entries	$4,895 00	
Receipts from privileges	3,126 80	
		$8,021 80
Balance		$2,628 20

This is the net amount that is actually paid out of our receipts. The receipts of the Park for the entire week, for admissions alone, amount to eleven thousand six hundred and eighty-three dollars and fifty cents, and those of the Pavilion, for the same time, five thousand four hundred and nine dollars and fifteen cents. You will plainly see that without this portion of our Fair the premiums would have to be materially reduced.

The annual Fair is useful and instructive, not only to the agriculturist, but to the mechanic, the artisan, the inventor, and the profound professional man, each and all of whom are more or less benefited by the exhibits made. The Board is now endeavoring to perfect a plan of crop reports, which, if accomplished, will be valuable. The system originated with the Department of Agriculture, at Washington, and is now being rapidly pushed forward. The plan is to establish a correspondent in each county who has public spirit enough to report each month, upon blanks furnished, the exact status of all crops. The difficulty experienced by us is that it is very hard to select a thoroughly responsible man who is willing to submit this information. In some cases we have succeeded, while in others we have signally failed. There is another proposition spoken of that we may adopt another year, to have the necessary blanks printed and placed in the hands of every man who runs a thrasher, and when he shall have completed a job, to sit down and copy from the bill charged to farmer the exact number of bushels thrashed, and get, at the same time, the acreage upon which it was grown. Then at the end of the year the export can be deducted, and the remainder will show the amount on hand. The Board desire the hearty coöperation of all agriculturists in this method to get the accurate statistics, so that the products of California may be fully shown from the producers' estimates, and not the speculators'. The great drawback of the Board in the past has been the indebtedness, which is now wholly wiped out, and the Society is in better condition than it has been for years. The grounds are in good order, likewise the stabling and stands.

The marked increase of California's industries and inventions has made it necessary for the Board to consider some plan for the erection of a desirable building wherein the resources could be shown in a much larger sphere. The present building has proven wholly inadequate to accommodate the vast throng of exhibitors that apply each year for admission. It is contemplated to establish a permanent exhibition of California's products, wherein could be placed for exhibition: First, the agricultural department—specimens of seeds, native woods, and other interesting natural products; second, a geological department; third, a mineralogical department; fourth, a zoölogical department; fifth, a department for antiquities. This exhibition to be open to all tourists, and those interested in the products of our State. Such a plan is feasible, and can with little aid be accomplished.

The Society being under the supervision of the State, the Board have thought proper to advise the location of a building to be known as the State Industrial Exhibition Pavilion, upon the grounds of the State located directly east of the Capitol. At a conference held with the Sacramento Board of Trade, it was agreed that the City and County of Sacramento should present the State with the sum of forty thousand dollars to aid in the erection of said building, provided the State would agree to erect one. It is the earnest desire of all connected with the Society throughout the State that a new building should be erected. The advantages gained and knowledge disseminated through our exhibitions is of vast importance to the State, and should be encouraged. We are no longer young, but fast approaching an age when we should be fully up in enterprises of this character as are our sister States.

The object of this Society being to encourage the cultivation of the soil, you will find several valuable papers herewith, pertaining to the mode and manner of cultivating the soil for various products. We also present herewith a map of California, with all information necessary to those wishing to migrate to this State. Our reports are sent to all the civilized portion of the globe. This information will be disseminated in proper form.

FINANCIAL SUMMARY.

Amount on hand at commencement of the year	$293 11
Total receipts from all sources	40,141 74
	$40,434 85
Total disbursements	$40,202 92
Cash on hand	231 93
	$40,434 85

EDWIN F. SMITH,
Secretary.

HUGH M. LA RUE,
President.

OPENING ADDRESS

OF PRESIDENT LA RUE, DELIVERED AT THE PAVILION, TUESDAY EVENING, SEPTEMBER 12, 1882.

Directors and Members of the State Agricultural Society: For the third time the honorable duty of making the formal declaration that the annual exhibition of the industrial products of the State of California is open, devolves upon me. Again our respect for the well established custom demands that this formal declaration shall be preceded by a brief address of encouragement and welcome. Permit me to say in the outset that I trust this distinguished honor is mine to-night for the last time. The great labor and high responsibility of the position I have occupied for three years should be passed from shoulder to shoulder, so that its burdens may not fall too heavily upon one, and its responsibilities be not inequitably placed upon a few. The time, labor, and attention I have given to the duties of this office have been freely and ungrudgingly accorded. Few have an adequate conception of the labor devolving upon the President of this Society. None, I am sure, who have never served in this office can realize the anxious solicitude, the earnest attention, the encroachment upon time, and the great labor the discharge of its duties involves. The only reward to be expected for the performance of these arduous duties is to be found in the success of these annual exhibitions. It is with pardonable pride and self-congratulation that I am enabled to remember that each of the annual exhibitions organized during the incumbency of this office by myself, have met with gratifying success. This success has been my reward, and I accept it gratefully as a complete, ample, and satisfactory compensation. Looking back into the experiences of the three years in which I have presided over your Society, I find in the motive by which I have been actuated, in the zeal with which I have been inspired, and the earnest effort I have made for the success of this department of public activity, the complete vindication of the plan whereby the position of President of this Society was divested of pecuniary reward. In history the best service that has been rendered to mankind has been rendered without hope of pecuniary reward. When the only compensation you may expect is the accomplishment of good, the motives are elevated, the purposes exalted, and the efforts sanctified by a steady zeal for the accomplishment of that good.

The arts found their zenith of development when the inspiration of genius alone impelled the brush and chisel. The monuments of philanthropy were reared by unpaid hands. The founders of great reform movements have died in poverty and obscurity. In short, the accomplishment of good, for its own sake, is the highest and holiest impulse that heart can know.

In this last address—last at least that I may deliver before your Society in an official capacity—I do not overstep the bound of exact justice to myself by laying claim to the motive of having consented to remove its responsibilities and discharge its duties solely because I felt that to do so was but to recognize the claim which every unpaid work has upon every public-spirited citizen.

Again it is my privilege to congratulate you upon the auspicious opening of this exhibition. The Fair inaugurated here to-night surpasses in many of its features most, if not all of its predecessors. The entire capacity at the Park for the accommodation and exhibit of stock has found full demand, and the display of agricultural implements and machinery is extensive, and shows continued improvement in methods of tilling the soil and gathering its products. All the available space of the Pavilion has been taken and occupied. Indeed, as to this last department of the Fair the exhibition has for some years been limited and seriously restricted by the meager capacity of this building. In my judgment we have reached a period in the history of this Society when the erection of a new Pavilion cannot longer be avoided. A proper exhibit of the industrial products of this great State demands Pavilion space far beyond the capacity of this structure. We have reached a time when the inadequacy of the space here provided will not only greatly impair the value of the annual exhibitions of the Society but will endanger their continuance. It is a law of all enterprises and all worthy associations of men to acquire higher motives and broader aims, and this Society will maintain a healthful condition and vigorous life so long as its operations are expanding. It will pass the meridian of its growth and enter upon its decline so soon as this natural tendency to expansion is arrested. The limited capacity of this Pavilion has fixed metes and bounds to the extent of this department of our annual exhibitions, so that it is now arresting the growth of our Society. The value of these annual exhibitions to every industrial interest of the State is such that the impairment of their usefulness should be looked upon with apprehension and alarm. The practical question, therefore, in the affairs of the Society to-day is, how to obtain a Pavilion large enough to meet the constant growing demands upon its space, and designed to make the exhibitions attractive as well as instructive. For the past three or four years the revenues of the Society have been greatly diminished by reason of the circumscribed capacity and imperfect structure of this building. It is the part of wisdom that this obstacle to the prosperity of the Society be overcome. In my opinion a suitable building, one sufficiently commodious to meet all requirements, and affording ample space for the exhibitor, would add from two to three thousand dollars annually to the receipts of the State Fair. Additional revenue would be derived from rentals of space, while the superior attractions of the exhibitions would greatly increase the attendance.

I believe that an increase of at least two thousand five hundred dollars a year to the treasury of the Society might be anticipated from such a source. With this fact in view it is my judgment that the construction of a new Pavilion within a year is practicable. The value of this present building, with the ground upon which it stands, is estimated at twenty thousand dollars. To this I believe may be added a like sum from the State. The Society itself could with safety incur a reasonable indebtedness for the accomplishment of an object promising returns so valuable to the treasury. It could establish a sinking fund of two thousand five hundred dollars per annum without encroachment upon the volume of revenues now coming annually into its accounts; and with the proceeds from the sale of this building and ground, with a small appropriation from the State, which I confidently believe can be obtained, with voluntary donations from the citizens of Sacramento, and with a loan of twenty-five thousand dollars, which could be procured at a low rate of interest, and which the increased revenues consequent upon the improved value and attractiveness of the exhibition would liquidate in ten years, the means for the erection of a large and suitable building may be had.

THREE WEEKS' EXHIBITION PROPOSED.

Another hindrance to the success of the Pavilion exhibition, as heretofore conducted, has been the short duration of the Fair. The labor and expense incident to preparation for a display, and also the labor and expense attending the care and returning of the goods exhibited, even though transported by the railroad free, are scarcely compensated by a five or six days' exhibit. I am convinced that a wise administration of the affairs of this Society demand that the Pavilion exhibition should be projected upon a plan which should extend the period of the annual exhibition to at least three weeks. The ideas upon this subject which have arisen in my mind are not matured, or expressed here to-night with the degree of confidence which proceeds from careful examination; but for some time I have deemed it both advisable and practicable to have the Pavilion exhibition extended over a period of some three weeks; to open the Park for the exhibition of stock during the second week, and devote the third week at the Park to the speed programme. When once the Pavilion is placed in order; when the exhibitors have established and arranged their various displays, the increased expense of continuing the exhibition for three weeks, as against one week, will be scarcely appreciable. This proposition also admits of an extended programme of special features, such as the trial of agricultural machinery, military parades and reviews, ladies' equestrian exhibitions, and field sports, athletic contests, shooting tournament, etc. A whole week, uninterrupted by a speed programme, is not too much time in which to make a proper exhibition of the herds, flocks, and stables of the State. This would, also, afford time for addresses to be delivered during Fair time, which, under the proposed conditions, would receive attention. Such an exhibition would have the individual attention of spectators, and would be more instructive to our people, and far more profitable to herdsmen, than the divided and unsatisfactory attention now given to this great department of industry. In the third week the speed programme would have full sway, and the field sports and the turf, with their pleasures and instructions, would be far more entertaining and delightful because unobstructed by the demands of a necessary stock display, and undisturbed in interest by reason of divided attention.

The State Fair conducted upon this broader and higher plan, would more nearly fulfill the requirements of an annual display of the industrial products of this State, than can ever be compressed into the compass of five or six days. That such a Fair would produce a large increase of revenues to the Society cannot be doubted.

At the very inception of such a plan, however, lies the construction of an adequate and commodious Pavilion, and with such a building, the plan here briefly outlined appears to me to be entirely practicable, and certainly such an accomplishment is very desirable.

Gentlemen of the Society, the products of the vineyards, orchards, fields, wine presses, mines, and workshops belonging to California, when properly brought together in an annual exhibition, will afford a display sufficiently valuable and interesting to claim the attendance of our people for at least the additional length of time which I have intimated. The industrial products of the great empire of wealth deserve and demand a more complete exhibition, both as to space and time for display, than has heretofore been attempted. If these requirements are not met, the very inadequacy of our Fairs will urge them on the downward way of decline to their ultimate extinction.

THE HARVEST.

Again it is my good fortune to congratulate you upon the prosperity of our State, and upon the conditions of peace and plenty which still attend us as a people. The season just closing has not been remarkable for its large aggregate yield of cereals, but taken as a whole the industries of the State have prospered, and the general results of the year will be very satisfactory. In a former address I took occasion to point out certain facts bearing upon the question of defertilization of our soils. In that address instances were cited where lands, which had been devoted for many successive seasons to the growth of wheat, had in later years been more instead of less productive. The past season is not without its lesson in this regard. In the great Sacramento Valley, and particularly in the largest wheat-growing sections, the rainfall for the season did not exceed eleven inches—an amount far below the average precipitation, and yet I have personal knowledge of yields exceeding forty bushels to the acre, and in a few instances reaching fifty bushels. These instances relate to Summer-fallowed land and were the results of careful cultivation. A few years since like results could not have been obtained with less than a full average of rainfall. Improved methods of cultivation are therefore insuring us against the reverses of dry seasons. From the very best obtainable data I estimate the surplus yield for the year at five hundred thousand tons. I place this estimate before you with a high degree of confidence in its accuracy. The information I have received leads me to believe that the yield will not exceed one half that of an average crop. While in a few localities full crops have been obtained, in the large wheat-growing areas of the San Joaquin Valley, and the west side of the Sacramento Valley, the crops have been very short, and in many instances almost entire failures. It is not necessary in this connection to present in detail the data upon which these figures are based. Let it suffice that the statement is made upon information and judgment for whatever it may be worth in estimating the volume and supply, so far as the granaries of California are to contribute a supply to the great breadstuff markets of the world.

A PLAN FOR THE COLLECTION OF CROP STATISTICS.

At this point, and because I am led to it by the natural association of ideas, I beg to introduce to your notice the suggestion of a plan whereby an accurate ascertainment of the annual yield of wheat may be definitely arrived at. I suggest that the State Board of Agriculture secure from each person engaged in thrashing grain in the State a full statement of the number of bushels of each kind of the cereals thrashed by him. The practicability of this plan will be briefly presented. However great the number of persons engaged in raising wheat in California, the number of persons engaged in thrashing that wheat is comparatively very few. Each thrasher keeps an accurate account of the number of bushels measured from the machine, because the thrashing is paid for by the sack or by the bushel, and therefore the number of sacks or bushels thrashed for each wheat-grower is an indispensable item to the proper bookkeeping of the thrasher. Thus we find in the hands of comparatively a small number of persons not merely the approximate data, not only the comparative estimate through which to reach a conclusion, but the actual data—the authentic accuracy expressing the actual fact and the last bushel measured and sacked. Many plans have been tried for ascertaining the wheat yield of the State. The number of acres sown to grain has been approximately ascertained; the yield per acre being ascertained in a few instances, and the entire acreage has been multiplied by the number of bushels each acre has been supposed or estimated to yield, giving as a result the supposed or estimated aggregate yield. In this case both the multiplier and multiplicand are very largely guess work. It is multiplying one guess by another, and the best result attained by this process will be a multiplied guess. The only possible failure in the plan which I have briefly presented to-night to take the place of this very imperfect method, would reside in the failure to obtain returns from all persons who have been engaged in thrashing. But the value of the statistics to be obtained in this accurate way is sufficient to justify the expenditure of money to make the figures absolutely certain. If each person engaged in thrashing grain is given a pecuniary reward upon the receipt of full returns of his work for the year, none, in my opinion, will fail to respond. But if in addition to the actual number of bushels thrashed the thrasher will furnish the President of your Society with a statement of the number of acres upon which the wheat and other grain thrashed by them was grown, the average yield per acre will be easily ascertainable, and the comparison of the yield, one year with another, will possess a highly instructive value. The export statistics may always be ascertained with reasonable certainty. Now, if an accurate statement of the aggregate yield can be obtained, the tonnage remaining in the State can always be ascertained, at any period of the season, by subtracting the export from the ascertained aggregate. The plan herein briefly outlined is submitted for your consideration.

DIVERSIFIED FARMING.

An address upon agricultural subjects would scarcely be accepted as orthodox without some reference to diversified farming. This subject has received consideration at the hands of the ablest thinkers and writers of our State. Diversity of agricultural products is so highly desirable, and so indispensable in most countries to successful farming, that no lack of thought and attention has been bestowed upon the subject. I desire to meet the question fairly and candidly, and it is not without due reflection that I say that greatly diversified agriculture is not possible or practicable in our State. The cereals are indigenous to our soils and climate. The evidence of this is to be found in the existence of waving fields of wild oats in the primitive condition of our soil. It is true that a variety of crops may be raised in detached portions of the State; that vegetables and wheat, corn, oats, and other cereals may be produced upon the fertile bottom lands, where moisture sufficient may be obtained for their growth and maturity; but diversified farming is practicable only by means of natural or artificial irrigation. The great body of the plain lands of California can be cultivated profitably only in large holdings, and when sown to a few cereals, such as wheat and barley. This is the simple truth of the situation. It is the stubborn fact that will not give way before our desires, and will not yield its sway to the pleasant pictures drawn by imaginative theorists. The only practical diversity to farming in the great wheat-growing areas of the San Joaquin and Sacramento Valleys, except when irrigation is resorted to, relates to the growing of stock.

The more prudent farmers have found it economical and profitable to save the straw grown in wheat and barley fields for Winter feeding of horses and cattle. I venture the opinion here that the time of cheap beef in the United States is past. The facilities for transportation have made it practicable to raise cattle at the foot of the Rocky Mountains, and even in California, from which to supply the butchers' stalls of London and Paris with fresh meats. The shipment of dressed meat is indeed more practicable than the shipment of grain, because the former is worth more per pound than the latter. Foreign lands will hereafter afford a market for our surplus beef. The tables of Europe have been competitors with our own for the surplus our herds and flocks afford. The vast wheat acreage of California produces straw enough, which, if economically used, would produce in the aggregate a very large supply of cattle from this State. Each wheat-grower will, in my opinion, find it practicable to combine stock-raising, in a very large measure, with the standard occupation of wheat-growing.

In considering this question of diversified farming, we should not overlook the fact that the most profitable production of a soil and climate is that which is most aided by the natural forces. The profits of any line of agriculture are ascertained only by the standard of the money value of its products. The question in its latest and best analysis, is how much value in dollars can be raised by devoting a certain number of acres to a given product. If by the growth of wheat upon the plain lands in California, an acre may be made to yield ten dollars in profit, and that ten dollars will purchase more corn than could be grown upon the acre, the dictates of true economy are unmistakably in favor of sowing the acre in wheat, and purchasing the corn with the cash product of its yield.

The fact that the farmers of California purchase their vegetables from markets has been the subject of much witty criticism, but in most instances criticised the testimony of the arithmetic vindicates the practice. An acre of land naturally adapted to the growth of wheat without irrigation will produce a sum of money greatly in excess of the value of the vegetables which can be grown upon that acre in like manner, without irrigation. The broad principle of political economy underlying these facts is that, as the soils, climates, and productions of different countries differ, the highest profit will be obtained by devoting each particular portion of the earth to those products in the growth of which nature yields the greatest possible aid, and by a free exchange of commodities avoid unnatural and unprofitable cultivation.

THE LABOR PROBLEM.

The labor problem, as relates to the farm, becomes more and more serious with each succeeding year. In its early history our State was isolated from the great centers of population. For years the overflowing population from older settlements upon the continent found profitable occupation in the territories lying east of the Rocky Mountains. The common laborer was not possessed of sufficient means to pay his expenses to California. The inducements here were not great enough to justify him in using the time necessary to make the trip across the Plains, and incur the expenses of such trip, or to pay his passage to California by way of the Isthmus. Only those of moderate means, or in more comfortable circumstances, and financially above the condition of the day laborer, could afford to abandon their old homes and home associations with the intention of becoming permanent residents of the Pacific slope. Another obstacle to the coming of this class was found in the introduction of the servile labor of a foreign race. To the extent that this race has obtained a foothold upon this continent it has produced an actual displacement of our civilization, to the absolute establishment of the civilization of China. From every standpoint, except that of immediate pecuniary profit to the individuals employing Chinese, this class of labor was extremely undesirable. It could not augment the aggregate of patriotism, of intelligence, of sociability, of morality, or of any other attribute of a high civilization. It could not be interwoven with the fabric of society or built into the foundation of government. It was merely a contribution to physical brute labor. The money it absorbed did not become a part of the working capital for enterprise. It possessed intelligence enough to accumulate, but it lacked the patriotism and enterprise so necessary to the upholding of a great commonwealth. Its ultimate result could only tend to the impoverishment of the commonwealth financially, and to the social, moral, and political degradation of the State. It did, however, serve a temporary purpose. It supplied a manual labor which could be obtained from no other source. Now that its increase has been arrested, we must accept the fact that as a labor element it is in the way of ultimate extinction.

During the past harvest season the procurement of labor necessary to the gathering of the products of our soil was a most difficult problem in the experiences of our agriculturists. A full crop this year would have doubled that difficulty. From what source then are we to derive the labor necessary to profitable cultivation of our lands. We have indulged the hope that the subsidence in Chinese immigration would attract to our shores the laboring classes of our own race. Up to this time this tendency has not set up in a marked degree. In the near future we are promised the cheapening of transportation to immigrants. If this should occur, some relief from this source may be anticipated; but there is a source of supply of farm help to which I beg leave briefly to refer. Is there any apology needed if I admonish the farmers of California to rely upon and encourage their sons to become farm laborers? Our forefathers planted here a mighty empire of population and wealth. They hewed down the forests and converted the wilderness into beautiful farms; they built magnificent cities with their own hands. They founded the greatest civilization that has been reared upon the earth without the aid of servile labor or the assistance of antagonistic races. They taught their sons that labor was honorable. They made us a nation of energetic and enterprising men. The question that confronts us to-day is, shall our sons be taught like habits of industry, enterprise, and thrift? In the recent past, when men had achieved fortunes in cities, they retired to the country and passed their declining years in the opulence, retirement, and elegance of country life. Unhappily this condition has found a complete reversal. Now those who achieve a competency in the cities remain there, while those who acquire a limited competency in the country abandon their rural habits and pursuits and flock to the cities. From seventy-five to ninety per cent of the American youth spend all the time from the age of seven to eighteen years in school. The discipline of industry and the knowledge of practical and successful farming are not acquired by them. The schools, colleges, and universities of our land are crowded with students fitting themselves for the professional walks of life. If there is a single instance in the University of California where the student is educating himself for rural pursuits, that instance is as rare as it is remarkable. These tendencies are having a marked effect upon the rural spirit of our people. The social advantages of rural life are constantly declining, and with that there is a corresponding decline in the beauty and attractiveness of rural homes. The physical and moral well-being of our State demands that this tendency should be arrested. There is no occupation pursued by men wherein intelligence and the higher education may be more profitably applied than to the occupation of farming. Mind is supreme in every calling in life, and no man ever had so much education, or so much mind, or so high a degree of intelligence, that the farm did not afford ample field for the full exercise of all these great qualities.

For the first time in the history of this nation, the experiment of excluding a foreign race has been entered upon. That experiment of exclusion raises the great question of self-dependence, and the simple logic of that question, in the plainest language, is that our boys must be taught to work.

FRUIT GROWING.

The question has often been raised, "Will fruit growing in California be overdone?" The solicitude upon this question arises out of the fact that the vineyards of the State are rapidly extending; that within a very few years orchards now being planted will come into bearing, from which will be gathered perhaps even twenty times greater yield of fruit than is at present obtained. I beg leave to devote a brief space in this address to some considerations bearing upon this question. The cost of transportation is gradually declining. One of the most marked tendencies of modern times is to abandon the cultivation of all products to the localities where they may be most profitably grown. This tendency is the result of intimate communication between different points of the earth. With the increase of fruit supply from California, there will be a corresponding decrease in the planting of orchards in all the region lying north of the thirtieth degree of latitude. With the cheapening of supply from this source, there will be a decline in the number of orchards planted in all that vast and populous region. In the United States alone there are thirty-five millions of people residing in latitudes where the apricot cannot be profitably cultivated. But the fruits of California are not confined to the United States for a market. Europe, and even Asia, are becoming consumers of our fruits. A like principle is applicable to our vineyards. There is no reason why in the near future California may not be the chief source of wine supply for the world. In addition to this the market for raisins is practically unlimited. The populations of the earth are divided into two general classes, known as the rice-eating and the wheat-eating peoples. The latter class is a large consumer of fruits, because a complex and varied civilization demands a variety of human food. I have taken pains to estimate the populations of the earth who reside within the limits of distance for profitable shipments of fruit, and I find that there are two hundred millions of people who reside in latitudes where grapes, pears, peaches, plums, and apricots cannot be profitably grown. With increased facilities of transportation, with more intimate commercial relations soon to supervene, this vast population will become consumers of these fruits grown in this State. For this and many other reasons I desire to pronounce a deliberate judgment in answer to the question, "Can fruit growing be overdone in this State?" and that answer is most decidedly in the negative.

THE SEED FARM.

One more suggestion, and I will relieve your attention; and I have reserved this to the last because I believe it is of more importance and more value than anything presented for your consideration in this address. In my judgment there is a broad field for the establishment of a farm for the production of seeds. The extent to which the germinal energies of the cereals may be augmented appears to be practically unlimited. The same cost of labor bestowed upon land will yield a much larger return if the seed sown possesses proper germinal energy. To improve the quality of seed should be the study and labor of some one or some class of men, who would devote themselves exclusively to that occupation. This, it appears to me, would be the province of the Agricultural College of the State University. I am not now proposing that enough seed should be grown to plant the fields or gardens of the whole State. What I propose is, that by a careful application of the law of selection, seed enough should be supplied to the agriculturists and gardeners of the State, from which seed enough could be raised of the improved varieties to plant their own fields and gardens. Mr. A. F. Blount, Professor of Agriculture in the State College of Colorado, has produced some most astonishing results by experimenting in this direction. By a careful selection from stalks which bore two ears, he succeeded at length in producing whole fields of corn upon which two perfect ears could be found upon each stalk. Upon this kind would also be stalks producing three ears. By careful planting from these, the tendency to more prolific bearing was finally set up and established as the germinal condition, resulting in the variety of corn known as Professor Blount's Prolific

Corn. This variety of corn, with the same labor in cultivation as bestowed upon the old varieties, is known to produce readily two hundred bushels to the acre, whereas the old variety was considered as having given a satisfactory yield at from twenty-five to fifty bushels to the acre. Thus the producing capacity of a single acre was multiplied three or fourfold without a greater expenditure of labor or money in its cultivation. In like manner, this intelligent experimenter has produced varieties of wheat which have doubled and trebled the yield per acre; and, as in the former case, without extra expense of labor or money. These experiments establish, in my judgment, the great profit to the agriculturist of California a well-directed seed farm would confer. I believe the bare suggestion of this question will justify it to your judgment. I have not time for its more complete elaboration here.

CONCLUSION.

Members of the Board of Agriculture and fellow citizens: One of the highest pleasures of the mind is found in recalling labor successfully accomplished and reviewing the results of the skill of the hands or the genius of the mind. Men love to impress their thoughts upon material things. The sculptor carves from the marble forms instinct with life and emotion, but far beyond the highest achievements of his chisel he holds ideals of beauty which are the inspirations of his genius, and which demand expression in creative forms. The painter immortalizes on canvas only the few fugitive glimpses of the pictures seen in his imagination his pencil may imperfectly portray. And still each finds joy in the skill which in marble or on canvas materializes the ideals of the mind. But this highest pleasure of the intellect is not confined to the high priests in the temple of the muses. Labor may look upon the results of toil with reverential pride. Mechanical skill may claim the highest nobility when the inestimable blessings due to the triumphs of inventive genius are remembered. The herdsman feels the quick awakening of pride as he views the symmetrical forms and witnesses the proud spirit of the animals his intelligent care and cultivation has bred to higher planes of life and nobler qualities of beauty, strength, usefulness, and endurance. The horticulturist is a painter from whose palette the blush of the peach and the rich purple of the grape are transferred. All worthy endeavor in every department of thought and activity works in the realm of high art. Viewed from the standpoint of the blessings conferred, the good to be achieved, all labor is sanctified. Here we have collected for the pleasure and instruction of comparison the results of the labor, skill, and genius of our people; and indulging the high hope that in this temple of Art and Industry our hearts may feel a higher aspiration toward the earnest purposes, duties, and responsibilities of life, and a devout gratitude toward the bountiful giver of all good, I now declare the Twenty-ninth Annual Exhibition of the State Agricultural Society of California duly open.

AGRICULTURE

AS IT IS, AND WHAT IT SHOULD BE.

ANNUAL ADDRESS, DELIVERED THURSDAY EVENING, SEPTEMBER 14, 1882, BY HON. J. DE BARTH SHORB.

MR. PRESIDENT, LADIES AND GENTLEMEN, MEMBERS OF THE STATE BOARD OF AGRICULTURAL COMMISSIONERS: Allow me to express my thanks for the honor you have conferred upon me by the invitation to deliver the annual address before your Society.

I feel it is a privilege which should fall to the lot of some man abler than myself; one whose conspicuous ability would have reflected more credit upon your good judgment—one who could have done more justice to the occasion.

I do not propose to take up your time, tax your amiability, or weary your patience by the recital of dry statistics of crops, products, the diversity of our great interests, nor shall I give any prominence to that particular one, upon whose importance I might be pardoned for dwelling. I consider statistics as entirely out of place here, for they are interesting only to a very limited number, and are of advantage only as a matter of study in the quiet of one's library, or to those debating the wisdom of some mercantile or real estate operation, or possibly to the statesman in forecasting the future of his State or country and determining the wants and necessities of his people.

I propose to treat generally of subjects that may be considered new departures from the established rules on such occasions, and yet in harmony with this meeting and its objects.

The subject of agriculture is so wide and far reaching, that it is difficult to touch on any subject at all affecting man in his social, business, or political relations to his fellow man that is not cognate to it.

I have long since realized the duty of urging on the attention of those I come in contact with, and who are exercising a dominating influence on the times and minds of the people, the necessity of some concert of action, looking to the arrest, if possible, of one of the great evils of our day, and which, in my judgment, seriously threatens the great destinies of our nation. I refer to the lamentable disproportion existing between the producers—laborers—workers, call them what you may—and that class of non-producers, idlers who throng the busy streets and crowded marts of our cities, trying to live on their wits, or in other words, on the labor and savings of others.

For many years past each census report goes to show the unhealthy and abnormal growth of our cities, and a proportional shrinkage in the rural populations.

Year by year the plow and the field are abandoned by the young, healthy, and vigorous men of our nation to swell the crowds of the "ne'er do weels" of our large cities.

Possessing undue confidence in their own powers of mind and capabilities for making success away from the farm in some easier way, they reach the cities, and failing again and again there to make their wits win in some respectable calling, fall back at last on the lap of a false destiny, eventually adding a large proportion to the criminal class.

I can conceive of no greater work or higher ambition on the part of an individual, or more in harmony with the highest inspirations of patriotism on the part of statesmen, than using every effort possible to stay or arrest this fast growing evil, which eventually must end in calamity to our nation. I believe this matter of such serious import that, were it in any way possible, I would like to see governmental interference or control invoked in this good work.

Revolutions follow fast on the heels of discontent, and discontent is ordinarily the immediate result of want due to the lack of honest labor in solving the question of the imperious demand for bread and butter.

It is because man's impulses and wants remain about the same under every form and condition of life that history so often repeats itself. Man is impelled to the commission of similar acts now for the very same reasons which inspired them at the dawn of civilization. All that Christianity, civilization, and advanced education have done has been to teach us control of our impulses, but they have never changed them; and when passion usurps control of our natures, we are as much the savage now as we ever were.

Civilization, in its most advanced form, carries with it grave responsibilities, and those who, by reason of their position, are practically invested with the care and control of the same, should guard well, and force that class to labor, who are now, as they always have been, an element of great danger to all communities.

Man, in his natural condition, belongs to the soil, and his business is to work it; and all other lives are artificial, growing out of the wonderful complex systems of trade, finance, and commerce.

On the farm the chances of reaching a certain degree of success for every man are more equal, and there, consequently, he is, or ought to be, happier. But few men, thank God, nowadays are denied sufficient bone and muscle to do an honest day's labor on the farm, and along with these forces, sufficient brain to care for the result of that labor when earned.

To a very limited number is given that extraordinary power of mind and organization by which grand successes are achieved. It is a fact universally recognized that not more than three (3) per cent, with and without ability, with and without capital, reach success in mercantile ventures; the balance, ninety-seven (97) per cent, go down in sorrow, and oftentimes disgrace, to unknown, or, perhaps worse, dishonored graves.

In agricultural pursuits (or, in better language, going to work on the farm) only about five (5) per cent fail to make a living or win success.

The farmer may not enjoy the luxuries of the city man, or the wild excitement of his life, but, if he will but learn to labor and to wait, the hour of success will dawn—independence will come to him; then comfort, peace, and honest pride must follow.

Unfortunately, there are only a few men, in these days, who are content with making an honorable living; all want to make fortunes, and fortunes within a few years. "The times are out of joint," and evil influences are at work when such conditions exist; and, waiving all the occult reasonings urged by the writers on political or social economy, I am forced to the opinion that the chief cause of this trouble is due to our mischievous systems of education, that are primarily at fault in directing public opinion in wrong and dangerous directions.

The entire school system of the United States, in my opinion, is radically wrong or defective. In our system we seem to enunciate the monstrous fallacy that all brains are equal; we throw out universal drag-nets, and draw in every kind and class of brain into our schools, and then set about to enforce the same amount and kind of education, regardless of the wide difference and inequalities in the receptive powers of the mind to be educated.

We seem to forget that there are as many dyspeptic minds as there are stomachs, and we can no more overload one than the other without evil, perhaps fatal result.

Nations, by the enactment of bad laws, may easily legislate the entire nation into law-breakers, and can more easily by the enforcement of bad systems of education ruin the yeomanry of the country, and by implanting wrong ideas of life and its duties destroy a people whom we would seek to elevate, benefit, and save.

I do not wish it to be understood that I am an enemy to our common schools, for no one of my means in this State has done more to build them up in his vicinity; no one more cheerfully than myself pays his taxes toward their support; but I do object to what is ordinarily taught in the schools after they are built. I do maintain that there is too much teaching and too little lecturing, and that the minds of our youth are not so educated as to impress upon them the necessity of aspiring to a life of usefulness as the most laudable ambition, and that therein and therein alone rest all chances for honor and respectability.

I am glad that all the leading universities in our own country and in Europe are adding to their professorial chairs the one of Agricultural Sciences, and are calling to them some of their very ablest men. Would it not be as well for our common and high schools to imitate and emulate this example and adopt some books in their course bearing on this subject; and to suggest also the fact that there are other and surer roads to success and respectability besides labor in the counting-house, or the professions of law, medicine, and divinity?

Were I asked to suggest an educational system that was entirely in accordance with my views, and one of grander comprehensiveness, I would, without hesitation, suggest that of Austria.

Austria's system might be best described as one of selection and rejection; one which, while enforcing on all its subjects the rudimentary elements of education, takes care never to over-educate an incapable mind or to deny to those minds capable of receiving it the highest possible training, and all at the expense of the Government.

Each year's examinations and rejections relegate the rejected brains to honorably fill the position in life they are capable of filling, and the few that are left on the final examination are of incalculable value to the Nation and the State.

In this system, therefore, is embraced the idea that the workshop, farms, counting-rooms, and the arts and sciences that belong to highly civilized communities, and are essential to their maintenance, have due consideration and are provided with proper representatives.

Common sense is the genius of humanity after all, and this is best displayed by the adoption of some system of education that recognizes in its scheme the varied conditions of human life, the diversified capabilities of man, his duties and responsibilities.

To induce young men to adopt some other calling than circumstances surrounding them would naturally induce them to select, you must educate them out of old channels into new associations and ideas.

To make the farmer's life more attractive to the city youths you must remove past erroneous ideas and demonstrate to them what the life practically is and means. You must present some other picture than the generally received typical farmer; that is a man with sunburnt cheeks, bronzed brow, or horny hand in homely dress, working the year round, giving "his mind to turn up furrows; and his care to give the kine fodder."

I would teach them that the mechanical arts in some of their grandest achievements have come to the farmer's aid and relieved him in a great measure of the handiwork and drudgery of bygone years—of forty years ago in fact—for within this period nearly all the great improvements in agricultural machinery have been made.

The thud of the goad to the slow but willing ox, as he leisurely walked the furrow along of Livy's time, is heard no more in the land; the ox has disappeared and in its place is beheld the potential movement of the steam plow; in place of the sickle, the sharp click of the reaper as the matured grass or golden grain falls down, and the familiar sound of the flail as it fell on the yellow sheaves on the old barn floor, forty years ago, is supplanted by the hum of the fast running wheels and shafts of the modern separator, turning out its thousand sacks a day.

In this age of rage for "old things" it may not be out of place to review for a moment the philosophical history of agriculture, the important part it has played in the cultivation of man, for this is necessarily coupled with a country whose conditions should be studied by every man who attempts to forecast the future of this great State, and who would wisely determine its possibilities.

The history of agriculture is coincident with that of civilization itself, and so intimately blended that the study of one means necessarily the study of the other.

It was the necessities arising out of the altered conditions of the first farmers, after leaving a nomadic life and control of tribal chieftains, and coming together to live in communities, that called into existence the first settled form of government.

Civilization depended on agriculture and climate. This carries the mind back to hoary and now sad Egypt, the birthplace of European civilization, five thousand years ago.

This country, in many material respects, is similar to our own, and may be studied with interest and profit to us all, as it existed thousands of years before the Christian era, and remains substantially the same to-day.

What Egypt has been to the European nations from the time that Menes, the first King of the elder dynasty, successfully turned the River Nile into new channels for irrigation purposes, California should be and must be to the American nation.

Dr. Draper, in referring to Egypt's hoary antiquity, and stating his philosophical reasons why she should have taken the position she did in European civilization, says: "Thousands of years have passed since the foundation of the first Egyptian dynasty; the pyramids have seen the old empire; the Hyksos monarchs the new empire; the Persian, Macedonian, the Roman, the Mohammedan. They have stood while the heavens themselves have changed; they were already five hundred years old when the Southern Cross disappeared from the horizon of the Baltic; the pole star itself is a new comer when compared to them." Humboldt, referring to these incidents that the past seems to be visibly nearer to us when we thus connect its measurements, says: "No country has had so varied a history as this birth-place of European civilization. Through the darkness of fifty centuries we may not be able to discern the motives of men, but through periods very much longer, we can demonstrate the conditions of nature. If nations in one sense depend upon the former, in a higher sense they depend upon the latter. It was not without reason that the Egyptians took the lead in Mediterranean civilization. The geographical structure of this country surpasses its hoary monuments in teaching us the conditions under which that people were placed. Nature is a surer guide than the traces of man, whose works are necessarily transitory. The aspects of Egypt have changed again and again; its structures, since man inhabited it, never!"

Why was it that civilization thus rose on the banks of the Nile and not upon those of the Danube and Mississippi? The answer is, civilization depends upon climate and agriculture.

In Egypt the harvests may be ordinarily foretold and controlled. Of few other parts of the world (excepting the irrigable portions of California) can the same be said. In most countries the cultivation of the soil is attended with uncertainties. From seed time to harvest the meteorological changes are so numerous and great that no skill can predict the amount of yearly produce. Without any premonition the crops may be cut off by long continued droughts, or destroyed by too much rain. The labor of the farmer is at the mercy of the winds and clouds. With difficulty, therefore, could a civilized State originate under such circumstances.

As long as life is a scene of uncertainty, the hopes of yesterday blighted by the realities of to-day, man is a maker of expedients, but not of law. In his solicitude as to his approaching lot, he has neither time nor desire to raise his eyes to the heavens to watch and record their phenomena; no leisure to look upon himself and consider what and where he is. In the imperious demand for present support, he dares not venture on speculative attempts for the purpose of ameliorating his condition. Under such circumstances, if once the preliminary conditions and surroundings of civilization be imparted to him, the very vicissitudes and uncertainties which have hitherto combined to depress him, produce an opposite effect.

Agriculture in Egypt is certain, and there man first became civilized. Agriculture in California can be made as certain, and here man should develop a civilization and prosperity unequaled in this world's history.

Stop one moment, and think that the entire surface of fertile and irrigable lands of the Delta is four thousand five hundred square miles; the arable land of Egypt is only two thousand two hundred and fifty-three square miles; and yet from this insignificant area were supported, at one period, over seven millions of people!

But when we have utilized our magnificent advantages which nature's God has given to this fair land, and have undertaken and successfully carried through irrigation schemes commensurate with our possibilities, then agriculture will become as precise a science with us as in Egypt, and a glorious future be assured.

Irrigation is to California what the life-blood is to man, or the piston rod to the steam engine. If we hope simply to maintain our present prosperity without advancing, irrigation must be supplied. Those magnificent yields of the cereals, which made the lands of California at one time famous, year by year are becoming alarmingly less, and in some parts of the State have already fallen below the average of some of the oldest States in the Union, whose lands have been cultivated for over a century. Nor can we, like the Eastern States, procure the fertilizers at figures which would permit their use. Lime, guano, and the phosphates cannot be purchased here at prices which would justify the investment. But even assuming we could procure all the fertilizers at equal or even lower figures, still irrigation would be the cheapest, most effective, and enduring restoratives.

I know this statement will be challenged by some one, and the experiences of many cited in contravention; that irrigation on a large scale in many places has been applied to raising grain, but has proved too expensive. Possibly to a few large land owners the result of irrigation may have proved disappointing, because the work has been done by expensive labor. Let these same lands be cut up into small farms of forty, sixty, or a hundred acres, and let the man who owns the land use the hoe in distributing the waters of irrigation, and then I know no failures will occur.

Near my home, at San Gabriel, there are lands adjoining the Old Mission buildings which have been cropped twice a year since the foundation of the Mission, one hundred and ten years ago, and they still retain their fertility unimpaired. This is purely the result of irrigation.

So important is this subject to the people and State, that while ordinarily opposed to all subsidies, I would heartily indorse any carefully guarded scheme looking to the procurement of National or State aid in assisting all well organized companies in carrying out irrigation enterprises.

I had earnestly hoped that the suggestions made in the very able report by the Board of Government Commissioners on the irrigation of the San Joaquin, Tulare, and Sacramento Valleys, would have long since been carried out in some form or other.

This may be left, however, to the Directory of the Central and Southern Pacific Railways, as the last grand and crowning work of their active, useful, and devoted lives.

If a tithe of the enormous sums they have expended in their gigantic railroad enterprises could as ably be directed in the construction of large irrigating canals and subsidiary ditches, a greater wealth could be created for this State than is represented by their combined stock in all their roads.

Imagine the great valleys of this State now traversed by the roads of this Company all under close cultivation, with waters of irrigation at hand to secure absolute certainty of large productions. What a picture of wealth is presented to our minds. How great a population could we support.

As an investment, looking only to the sale of the water for profit, no safer one could be offered; and when the immense increase of tonnage is considered and the fares from dense populations added, which are sure to follow irrigated countries, it seems to me that we may reasonably hope that before long railroad men may act on this suggestion, and transform these sterile plains of millions of acres into garden spots of beauty and of wealth.

I believe with the great increase of income and net profits, over-running expenses incidental to such enterprises, the Railroad Company would then schedule their freights and fares in so liberal a spirit as to end all hostile criticism, and so wed themselves to the hearts and affections of this people, in bonds of mutual respect and confidence, such as few men in the history of our country ever had an opportunity of forming.

This is a greater work for the railroad kings to accomplish than was the building of the pyramids by the great Egyptian monarchs, and in its lasting benefits to this State more enduring than those monuments, conceived in man's weakness and vanity, and accomplished by the forced labor of millions of unhappy souls.

Should ever my hopes be realized, and I live to see the great plains of California blossom like the rose under the inspiration imparted by the waters of irrigation, I trust these lands may be owned in small tracts and occupied and worked by the owners, and upon which they will build homes worthy of the name and its associations.

It is never to the welfare of a State or nation that its lands should be held in large tracts, as is often the case, unfortunately, in this great State of ours. It is a thousandfold better that its lands should be held by small holders, as in France. There are grand conservatism, the highest courage, and the most devoted patriotism created by this system, such as is witnessed with no other system known to civilized man. It creates a class of men who stand ready to assist the authorities in the maintenance of peace, law, and order at home, and facing the foreign enemy, no matter from what region he come.

We want no such teachings as might be inspired by the conclusions of Henry George's work, known as "Progress and Poverty," that is, making the Government owner in fee of all its lands and its citizens tenants at will. It seems to me that this distinguished author, who so thoroughly well exposed the errors of Malthus and Adam Smith, has commissioned some one to do the same by him. His work conveys to my mind this idea: A man who, starting to build a pyramid, laid well his foundation, broad, deep, and grand, and then thereon erected "The House that Jack Built."

We want a State of small, happy, and contented farmers, and in their homes virtuous and honest wives and children, taught to respect the laws of God, the laws of their country; to respect honest labor and its inevitable results. I long to see millions of such homes and families filling our rich valleys and covering our hills and mountain sides, and gathered around their hearthstones happy and reverential family groups.

In the fullness and perfection of such a life are witnessed all conflict between labor and capital adjusted; their differences all reconciled and ended, and whatever asperities might be left to ruffle the tranquil surface of their lives will be borne away by lessons or inspirations gathered from "the olive branch of peace."

ANNUAL MEETING.

The Board of Directors held their annual meeting on Monday, February 5, 1883, with President La Rue in the chair and the following members present: Hancock, Newton, Rose, Finigan, Coleman, Shippee, Chase, Green, and Carr. Absent: Boggs and Shafter.

Messrs. Finigan, Coleman, and Shippee having been reappointed Directors were sworn in by President La Rue.

The committee appointed on lease of Park made the following report:

Sacramento, February 5, 1883.

Mr. President: Your committee to whom was referred the leasing of Park buildings with privileges connected therewith, beg leave to make the following report: Applications were received from the following named parties, with amounts offered set opposite their names:

H. S. Beals	$3,012 per annum.
S. S. Beede	3,000 per annum.
Robert Allen	3,300 per annum.
George Ingles	3,000 per annum.
W. H. Coombs	3,000 per annum.

Mr. Robert Allen having the highest bid, the committee decided to let the same to him. Mr. Allen subsequently making an additional bid of three hundred dollars per year for the use of the pasture field, and the same was accepted by the committee. Your committee would therefore report that they have leased the Park buildings with privileges named in lease, with the pasture field, to Mr. Robert Allen, *for a term of three years from* February 1, 1883, *for* the sum of three thousand six hundred dollars per year, payable at the rate of three hundred dollars per month in advance. And that they have allowed him the sum of fifty dollars for the purchase of seed to put in said pasture.

GREEN,
HANCOCK,
COLEMAN,
La RUE,
Committee.

Upon motion, the report of the committee was accepted, and an order made directing the Secretary to draw a lease in accordance with said report, and have the same duly authenticated; also, to obtain from Mr. Allen a sufficient bond to cover the period named.

The Secretary's report for the year ending February 1, 1883, was read and adopted.

ELECTION OF OFFICERS.

The Board of eighteen hundred and eighty-three is composed of the same members as was the Board of eighteen hundred and eighty-two, Messrs. Finigan, Coleman, and Shippee having been reappointed. The next order of business being the election of President, Honorable H. M. La Rue, the retiring President, said, that in retiring from the chair he desired to return his thanks for the honors bestowed upon him by the Society, and that he had labored in the interest of the Society ever since he was first appointed Director, and should continue to render whatever aid he could to make the Society useful in the object set forth. He thanked the members for their uniform courtesy and assistance, and assured them that his associations with them had been pleasant and harmonious.

Nominations being in order, Mr. Rose placed P. A. Finigan, of Alameda, in nomination.

Mr. Hancock named Christopher Green, of Sacramento.

Upon motion, the nominations closed.

The vote being by ballot, was taken, and resulted as follows: Green, three; Finigan, six; Blank, one.

Mr. Finigan, having received a majority of all the votes cast, was declared duly elected. Whereupon, Mr. La Rue introduced Mr. Finigan as the President for the ensuing term.

Mr. Finigan, on taking the chair, thanked the Board for courtesy shown, and assured them that he would attend to the duties with a watchful eye and a willing hand, and asked the assistance of the Board in carrying out the duties.

The election of Secretary was not deemed necessary, as that officer held at the pleasure of the Board.

Mr. L. A. Upson was unanimously chosen Treasurer.

Honorable Christopher Green was, by unanimous consent, appointed Superintendent of Park.

W. P. Coleman was also unanimously elected Superintendent of Pavilion.

Upon motion of Director Chase, the thanks of the Board were tendered to the officers of eighteen hundred and eighty-two for the faithful performance of their duties.

President Finigan appointed the following committees:

ON FINANCE.

Green, Coleman, Chase, and Newton.

ON LIBRARY.

Shafter, Hancock, Rose, Boggs, and Secretary.

ON PRINTING AND PUBLICATION.

Coleman, La Rue, Carr, President, and Secretary.

The consideration of the Premium List was postponed until the next meeting, which was fixed to be held on Monday, March 12, 1883, at 7:30 P. M.

After consideration of other business of minor importance the Board adjourned.

FINANCIAL REPORT.

SUMMARY.

RECEIPTS.

Date	Item		
1882.			
Feb. 1	—Balance, cash on hand		$ 293 11
Dec. 1	—D. O. Mills & Co. overdraft against State warrant	$ 6,550 29	
	Races, entries to, and forfeits	7,707 50	
	Pasturage	250 00	
	Park and Pavilion receipts	21,523 95	
	Rent of Park	3,000 00	
	Premiums	10 00	
	Back entrance on Cairo	100 00	
	Occidental Stake, 1883—payments	250 00	
	Occidental Stake, 1884—payments	750 00	
			40,141 74
	Total receipts		$40,434 85

DISBURSEMENTS.

Date	Item		
Jan. 1	—Old liabilities: Vanderslice, $455 80; Race No. 11, $100	$ 555 80	
Dec. 1	—Advertising	1,178 25	
	Building and improvements	1,718 26	
	Expense account	6,650 96	
	Interest and discount	110 64	
	Insurance	387 30	
	Premiums	8,651 36	
	Races, purses, and stakes	14,262 50	
	Salaries	5,897 00	
	Pasturage	24 95	
	D. O. Mills & Co. overdraft account, 1881	765 90	
	Cash on hand	231 93	
			$40,434 85

RECEIPTS.

Date	Item		
1882.			
Feb. 1	—Balance		$ 293 11
	Premiums.		
Sept. 1	—Return of premium by W. F. Peterson		10 00
	Pasturage.		
Sept. 14	—S. S. Beede, rent of same		250 00
	Races—Entrance fees, etc.		
	Race No. 1	$ 415 00	
	Race No. 2	200 00	
	Race No. 3	100 00	
	Race No. 4	1,000 00	
	Race No. 5	1,080 00	
	Race No. 6	210 00	
	Race No. 7	250 00	
	Race No. 8	130 00	
	Race No. 9	375 00	
	Race No. 10	310 00	
	Race No. 11	112 50	
	Race No. 12	840 00	
	Race No. 13	360 00	
	Amounts carried forward	$ 5,382 50	$ 553 11

Date	Item	Amount	Total
	Amounts brought forward	$ 5,382 50	$ 553 11
	Race No. 14	200 00	
	Race No. 15	480 00	
	Race No. 16	195 00	
	Race No. 17	180 00	
	Race No. 18	600 00	
	Race No. 19—(No entrance)	----------	
	Race No. 20	70 00	
	Race No. 21	50 00	
	Race No. 22	250 00	
	Race No. 24	300 00	
			7,707 50
	Rent.		
Dec. 1	S. S. Beede	----------	3,000 00
	Occident Stake, 1883	$ 250 00	
	Occident Stake, 1884	750 00	
			1,000 00
	Park and Pavilion.		
July 18	Life membership, G. Valensin	$ 50 00	
Aug. 4	Life membership, F. Bullard	50 00	
Sept. 7	Life membership, Richard Burr	50 00	
11	Life membership, J. H. Glide	50 00	
	Life membership, Thomas Fox	50 00	
			250 00
Sept. 11	Annual membership	$ 3,075 00	
	Annual membership, entry clerks	545 00	
12	Annual membership	1,375 00	
13	Annual membership	475 00	
14	Annual membership	807 00	
15	Annual membership	60 00	
16	Annual membership	3 00	
			6,340 00
Sept. 11	Single admissions	$ 330 00	
12	Single admissions	855 00	
13	Single admissions	1,688 50	
14	Single admissions	2,726 50	
15	Single admissions	2,191 00	
16	Single admissions	1,109 15	
			8,900 15
Sept. 11	Quarter stretch badges	$ 355 00	
12	Quarter stretch badges	140 00	
13	Quarter stretch badges	55 00	
14	Quarter stretch badges	42 50	
15	Quarter stretch badges	7 50	
16	Quarter stretch badges	7 50	
			607 50
Sept. 11	Special Stand receipts (sold at office)	$ 39 00	
	Special Stand receipts	45 00	
12	Special Stand receipts	50 00	
13	Special Stand receipts	95 00	
14	Special Stand receipts	135 50	
15	Special Stand receipts	145 50	
16	Special Stand receipts	51 00	
			561 00
Sept. 11	Grand Stand receipts	$ 69 50	
12	Grand Stand receipts	157 00	
13	Grand Stand receipts	273 50	
14	Grand Stand receipts	356 50	
15	Grand Stand receipts	246 00	
16	Grand Stand receipts	163 50	
			1,266 00
Sept. 15	Coupé badges		2 00
Sept. 16	Privileges at Pavilion	$ 267 00	
	Art catalogues sold	27 45	
			294 45
Sept. 16	Pool privilege	$ 3,037 35	
	Speed programmes sold	81 20	
	Straw sold	8 30	
	Manure sold (W. C. Hopping)	40 00	
	Sweepstake entries, premiums	136 00	
			3,302 85
	Amount carried forward		$ 33,784 56

Date	Item		Amount
	Amount brought forward		$33,784 56
	Profit and Loss.		
Sept. 16	Old entrance due on Cairo		100 00
	D. O. Mills & Co.		
Dec. 1	Amount of overdraft, account State warrant		6,550 29
	Total receipts		$40,434 85

EXPENDITURES.

Advertising.

Date	Item	Amount	Total
1882.			
Sept. 18	Journal of Commerce	$ 20 00	
25	Sacramento Leader	15 00	
27	Reno Journal	10 00	
	Morning Call	63 00	
	Rural Press	33 75	
	Daily Report	25 00	
	Post Publishing Company	33 25	
	California Journal	10 00	
	News Letter	30 00	
	Monitor	10 00	
	Examiner	74 75	
	Spirit of the Times	75 00	
	Bulletin	81 00	
	Chronicle	125 65	
	Alta	52 50	
	Pacific Life	35 00	
	Breeder and Sportsman	150 00	
	Daily Exchange	23 00	
	Mirror Publishing Company	4 60	
29	Record-Union	143 50	
	Daily Bee	125 75	
Oct. 10	Sacramento Journal	15 00	
24	California Patron	12 50	
Nov. 20	Semi-Tropic, $5, and Galt Gazette, $5	10 00	
			$ 1,178 25

Races.

Item	Amount	Total
Race No. 1—Added money, entrance and forfeits	$ 615 00	
Race No. 2—Added money, entrance and forfeits	700 00	
Race No. 3—Added money, entrance and forfeits	350 00	
Race No. 4—Purse	1,000 00	
Race No. 5—Purse	1,200 00	
Race No. 6—Purse	300 00	
Race No. 7—Purse	500 00	
Race No. 8—Added money, entrance and forfeits	305 00	
Race No. 9—Added money, entrance and forfeits	625 00	
Race No. 10—Added money, entrance and forfeits	510 00	
Race No. 11—Added money, entrance and forfeits	362 50	
Race No. 12—Purse	1,200 00	
Race No. 13—Purse	1,200 00	
Race No. 14—Purse	500 00	
Race No. 15—Purse	800 00	
Race No. 16—Added money, entrance and forfeits	395 00	
Race No. 17—Added money, entrance and forfeits	480 00	
Race No. 18—Added money, entrance and forfeits	1,100 00	
Race No. 19—Purse	250 00	
Race No. 20—Purse	420 00	
Race No. 21—Purse	100 00	
Race No. 22—Stakes and forfeits	750 00	
Race No. 24—Purse	600 00	
		14,262 50

Expense Account.

Date	Item	Amount	Total
Feb. 1	Repairing frames, E. & G. Gump	$ 7 10	
	Exchange	35	
	Delivery of diplomas, W. R. Toll	1 00	
	Telegrams	50	
	Amounts carried forward	$ 8 95	$15,440 75

	Amounts brought forward	$ 8 95	$15,440 75
Feb.	1—Framing diplomas, H. Clock	5 00	
	Postal cards and expressage	95	
	Wood for office, McKay & Co.	7 50	
	2—Expressage	25	
	Cleaning windows, H. Clock	2 50	
	Postage and cartage	1 00	
	Postage stamps	3 50	
	Error in charging up S. S. Beede's bill	10 00	
	28—Team at Park, L. Waite	10 00	
	Postage stamps for reports	4 00	
Mar.	1—Use of four-horse team plowing track	30 00	
	Sundries for use of chain-gang	2 00	
	Expense on diploma	25	
	Sundries by Lasher	4 00	
	Expressage on crop reports	1 25	
	Telephone, three months	14 25	
	2—Postal cards	50	
	Expressage on Berkshire Record	2 50	
	Board of man plowing track, Mr. Scott	5 50	
	Labor on track, L. Waite	4 00	
	Postage stamps	5 00	
April	1—Filling cellar at Park, J. H. Scott	40 00	
	Postage stamps	5 00	
	Post Office box rent	4 00	
	Postal cards	50	
	9—Hay for Park, M. W. Odell	26 30	
	Filling diplomas, F. J. Lewis	5 00	
	19—Expressage on reports	3 45	
	Postal cards	25	
	Merchandise, Billingsley & Co.	10 10	
	Merchandise, Jno. Breuner	24 25	
	Postage stamps	5 00	
May	6—Horseshoeing, S. S. Nixon	10 00	
	Machinery, W. Gutenberger	11 00	
	Blacksmithing, W. L. Wise	9 25	
	Advertising, Record-Union	6 00	
	Merchandise, Baker & Hamilton	7 30	
	Survey and plat, J. C. Pierson	90 00	
	10—Use of plow, Jas. Touhey	7 00	
	11—Subscription, N. Y. Spirit	5 10	
June	5—Postage stamps	6 50	
	Sand for filling in	2 50	
	7—Hay for Park, S. C. Tryon	33 90	
	12—Team at Park, L. Waite	8 00	
	Telegram, L. U. Shippee	1 00	
	26—Brickwork, repairing wall, B. McAfee	34 00	
	27—Subscription, Turf, Field, and Farm	5 10	
	Postage stamps	4 00	
July	1—Horseshoeing, S. S. Nixon	5 00	
	Postal cards	1 00	
	5—Subscription, Breeder and Sportsman	5 00	
	7—Labor on track, A. J. Lyons	11 00	
	10—Telegram, J. De Barth Shorb	1 10	
	11—Post Office box rent and postage stamps	10 00	
	15—Repairs on sprinkling wagon, Guthrie Bros.	20 00	
	Hauling dirt, L. Waite	12 00	
	Expressage	25	
	19—Silverware, W. K. Vanderslice & Co.	100 00	
	20—Cutting weeds, J. H. Scott	25 00	
	Cyclopedia, G. I. Lytle	6 00	
	Expressage	25	
	Hauling dirt, L. Waite	4 00	
	Cartage on diplomas	50	
	Sack of salt	40	
	25—Hay for Park, B. F. Odell	21 50	
	26—Stamps for posters	20 00	
	28—Stamps for posters, and cartage	10 25	
	29—Labor, folding posters, Wm. Crump	6 00	
	31—Repairs at Park, Storms & McAfee	5 35	
	Amounts carried forward	$ 752 00	$15,440 75

	Amounts brought forward	$ 752 00	$15,440 75
Aug. 5—	Telephone, five months rent	23 50	
	Spout for tank, Locke & Lavenson	2 75	
	Straw for Park, A. R. Lasher	5 00	
	Horseshoeing, S. S. Nixon	7 50	
7—	Cleaning office and windows, H. Clock	4 50	
	Postage stamps	3 00	
9—	Postal cards	1 00	
10—	Sand, John Rider	5 00	
	Dues National Trotting Association	81 00	
11—	Telegrams	90	
14—	Silverware, W. K. Vanderslice & Co.	75 00	
15—	Filling at Park, B. R. Crocker	264 00	
21—	Hauling at Park, L. Waite	27 00	
	Merchandise, Gutterman & Co.	11 00	
	Telegrams	30	
	Repairing chair	1 00	
	Postage stamps and expressage on posters	18 25	
26—	Repairs on harness, J. T. Stoll	4 00	
	Plumbing at Park, Scott & Muir	138 70	
Sept. 1—	Postage stamps	3 50	
2—	Cartage of hose to Pavilion	50	
4—	Telegrams	2 25	
7—	Hay and grain, E. A. Burr	17 66	
	Hay, L. Waite	32 45	
	Use of team on track eight days, L. Waite	32 00	
8—	Telegrams	2 55	
9—	Repairing chair	1 00	
	Making badges, E. L. Smith	12 50	
	Hauling sand, H. Myers	2 00	
	Elgin soap, H. A. Wade	24 00	
11—	Repairing locks, J. H. Merrill	2 00	
	Reefing halyards	5 00	
	Repairs, P. M. Chatterton	4 00	
15—	Expense of President, on account	100 00	
	Freight on merchandise from Stern & Rose	8 65	
17—	Bucket for Park	50	
	Expressage	1 00	
18—	Hay, oat, for Park during Fair, L. Waite	730 25	
	Use of team and man one day, L. Waite	4 00	
	Music, First Artillery Band	500 00	
	Gas, Capital Gas Company	291 60	
	Key and tacks	55	
	Coloring walls, J. Slaughter	38 00	
	Hauling sawdust, J. Duffy	3 00	
	Merchandise for Park, W. F. Peterson	37 00	
	Decorating Stand, Sims Emery	6 50	
	Steward's bill, B. A. Johnson	119 25	
	Horse hire, Irvine & Co.	30 00	
	Hack hire, J. F. Toomey	19 00	
19—	Express wagon to Park, R. Mellon	2 50	
	Sawing wood at Park for engine	1 25	
20—	Hack hire, Wilson & Mitchell	4 00	
25—	Hay at Park, L. Waite	74 60	
	Straw at Park, L. R. Davis	352 00	
	Express charges	25	
	Cartage on cases, McCabe	1 00	
26—	Cartage, R. Burnett	1 00	
	Cartage, Art Gallery, John Lafferty	38 00	
	Cartage, chairs to Park and Pavilion, and return, Grubbs	12 55	
	Cartage of garbage, J. Kaiser	6 25	
	Damage to picture	3 50	
27—	Lumber, Sacramento Lumber Company	269 75	
	Paper lining, Art Gallery, M. R. Beard	58 20	
	Repairs to derrick, H. M. Bernard	16 75	
	Use of team, A. Meiss	51 00	
	Filling diploma, E. C. Atkinson	75	
	Plumbing, Scott & Muir	226 46	
28—	Labor at Park, R. J. Kady	18 00	
	Hauling hose, J. Crone	3 00	
	Amounts carried forward	$4,596 92	$15,440 75

	Amounts brought forward	$ 4,596 92	$15,440 75
Sept. 28	Grain for swine, etc., C. McCreary	48 38	
	Bill posting, Sacramento, San Francisco, Oakland, and San José	193 70	
29	Drafts, postage, and postal orders	4 70	
30	Merchandise, Huntington, Hopkins & Co.	228 51	
	Sign painting, Calvyn & Chipman	22 00	
	Horse hire, J. W. Wilson	24 00	
	Merchandise for Park, S. J. & J. M. Jackson	6 75	
	Blacksmithing for one year, J. F. Hill & Co.	233 58	
	Merchandise and use of glass, Whittier, Fuller & Co.	214 45	
Oct. 3	Telegrams for September	3 45	
5	P. O. Box rent, W. C. Hopping	4 00	
6	Merchandise, Stern & Rose	67 00	
7	Merchandise, C. H. Krebs	75	
	Wood for engine, D. Gardner	18 00	
	Merchandise, J. J. Trarbach	35 00	
	Merchandise, J. L. Chadderdon	22 75	
10	Straw for Park, A. R. Lasher	11 90	
12	Manufacturing case, Taft & Co.	12 25	
	Postal cards	60	
	Hack hire, W. Wildman	8 00	
14	Merchandise, etc., Kirk, Geary & Co.	15 75	
	Merchandise, awning, etc., Locke & Lavenson	74 00	
	Use of crockery, A. Dennery	13 50	
	Grangers' Business Association, annual bill merchandise	320 75	
	Use of furniture, John Breuner	23 00	
	Incidentals, W. P. Coleman	28 50	
16	Alfalfa hay, John Rooney	96 25	
18	Filling diplomas, F. J. Lewis	22 00	
	Wood at Park, J. L. Clark	5 50	
24	Merchandise, J. B. White	1 30	
25	Wagon hire, E. A. Scott & Co.	5 50	
28	Merchandise, E. Lyon & Co.	100 72	
	Merchandise, Jackson Bros.	1 50	
	Horseshoeing	6 25	
	Repairs at Park, Guthrie Bros.	1 50	
30	Sundries for November	62 00	
Dec. 31	Sundries for December	85 35	
Jan. 31	Sundries for January	30 90	
			6,650 96

Building and Improvements.

Sept. 27	Lumber and labor, permanent additions at Park		1,718 26

Insurance.

July 12	A. Leonard, policy on Grand Stand	$ 93 70	
15	H. Hansche, policy on Grand Stand	62 50	
Aug. 1	J. T. Carey, policy on Grand Stand	93 75	
Sept. 29	W. P. Coleman, policy on Park and Art Gallery	137 35	
			387 30

Pasturage.

Sept. 20	Barley for seed, M. Barber		24 95

Premiums.

Feb. 1	Sundry premiums from 1881	$ 71 00	
May 5	Batchelder & Co., account, 1881	25 00	
July 1	W. K. Vanderslice, medals, etc.	100 53	
Sept. 18	Ladies' Tournament	100 00	
	Walking Match premium	25 00	
Sept. 1	First Department, premiums paid	4,226 87	
	Second Department, premiums paid	688 00	
	Pavilion, premiums paid	2,317 00	
	Art Gallery, premiums paid	444 00	
Nov. --	W. K. Vanderslice, medals, $518 96; Pavilion premiums paid	653 96	
			8,651 36
	Amount carried forward		$32,873 58

	Amount brought forward		$32,873 58

Salaries.

Mar. 1	E. F. Smith, salary for February	$ 125 00	
	A. R. Lasher, salary for February	45 00	
April 1	E. F. Smith, salary for March	125 00	
	A. R. Lasher, salary for March	45 00	
May 3	E. F. Smith, salary for April	125 00	
June 5	A. R. Lasher, salary for April and May	90 00	
	E. F. Smith, salary for May	125 00	
July 1	E. F. Smith, salary for June	125 00	
7	A. R. Lasher, salary for June	55 00	
Aug. 1	E. F. Smith, salary for July	125 00	
5	A. R. Lasher, salary for July	55 00	
Sept. 1	E. F. Smith, salary for August	150 00	
7	A. R. Lasher, salary for August	55 00	
28	E. F. Smith, salary for September	150 00	
Oct. 10	A. R. Lasher, salary for September	55 00	
31	E. F. Smith, salary for October	150 00	
Nov. 7	A. R. Lasher, salary for October	45 00	
30	E. F. Smith, salary for November	150 00	
Dec. 31	E. F. Smith, salary for December	150 00	
Jan. --	A. R. Lasher, salary for November and December	90 00	
	E. F. Smith, salary for January	150 00	
	A. R. Lasher, salary for January	45 00	
			2,230 00

Park Payroll.

E. S. Culver, Clerk of Course	$ 50 00	
J. E. Larue, Entry Clerk, First Department	45 00	
W. P. Emery, Entry Clerk, Second Department	50 00	
O. S. Flint, Chief Ticket Clerk	30 00	
Jos. Bailey, Assistant Ticket Clerk	18 00	
W. Craig, Assistant Ticket Clerk	18 00	
J. M. Hillhouse, Membership Ticket Clerk	30 00	
F. J. Kearney, Assistant Membership Ticket Clerk	18 00	
H. Treichler, Blackboard Clerk	12 50	
Geo. C. McMullen, Chief Marshal	30 00	
A. S. Folger, Assistant Marshal	30 00	
W. S. Enos, Assistant Marshal	30 00	
Lee La Rue, usher Director's stand	18 00	
H. S. Beals, usher special stand	18 00	
G. Scheneiser, engineer	45 00	
Geo. Ingles, ticket seller	12 00	
C. Williams, ticket seller	12 00	
O. Reiffarth, ticket seller	12 00	
K. Seymour, ticket seller	12 00	
G. Burnett, ticket seller	12 00	
S. Butler, ticket seller	12 00	
Jno. Frost, programmes	18 00	
A. Powers, ticket seller	12 00	
W. R. Cantwell, usher	18 00	
W. J. Toll, weigher	27 00	
F. Jones, carpenter	42 00	
Jas. Connell, carpenter	18 00	
W. H. Hatch, carpenter	6 00	
P. M. Chatterton, Assistant Superintendent	65 00	
Jno. Lynam, fire watch	21 00	
M. O'Meara, Jr., fire watch	18 00	
J. Fitzpatrick, carpenter	39 00	
D. W. Walker, usher grand stand	18 00	
H. L. Parker, stairman	15 00	
W. E. Card, stairman	15 00	
Geo. Stout, stairman	15 00	
Jos. Grafton, stairman	15 00	
Sam'l Montgomery, stairman	15 00	
J. E. Smith, stairman	15 00	
John Ireland, stairman	15 00	
Jas. McGraw, stairman	15 00	
C. A. Pierson, machinery watchman	24 00	
Capt. Brooks, machinery watchman	27 00	
Robt. Mellon, gate under stand	18 00	
Amounts carried forward	$ 1,005 50	$35,103 58

Amounts brought forward	$ 1,005 50	$35,103 58
M. L. Hauk, G Street gate	30 00	
J. H. Hunter, H Street gate	30 00	
B. F. Ready, G Street gate	30 00	
John Shellars, G Street gate	30 00	
J. H. Horage, G Street gate	30 00	
H. Garrett, quarter stretch gate	18 00	
John Kady, vehicle gate	15 00	
Sam. Johnston, upper gate	18 00	
W. H. Hatch, vehicle gate	15 00	
P. C. Fenner, police, back wall	7 50	
F. Cook, police	15 00	
R. B. Robertson, police	15 00	
D. Garrison, police	15 00	
P. Brannigan, police	15 00	
W. H. McCarty, police	15 00	
Jno. Mitchel, police	15 00	
W. J. Cooper, police	15 00	
Wm. McKibbon, police	15 00	
D. Foley, police	15 00	
J. Wood, police	15 00	
R. May, police	15 00	
J. J. Cadogan, police	10 00	
A. F. Turner, police, back wall	15 00	
A. Greer, police	15 00	
Wm. Gwynn, police	15 00	
R. T. Cohn, reserved seat clerk	18 00	
W. Singleton, rear porter	17 50	
F. Bullard, rear porter	19 00	
A. Tittle, rope man	15 00	
Geo. Roach, laborer	18 00	
L. Whiting, Judges' Stand	20 00	
Jno. Kady, laborer	14 00	
Jas. Connell, team and self	28 00	
R. C. Ferguson, contract cleaning stands	68 50	
D. V. Thorp, police	15 00	
		$ 1,682 00

Pavilion Payroll.

A. J. Hopper, Assistant Secretary	$ 100 00	
O. P. Dodge, Assistant Superintendent	106 50	
J. S. Miller, Financial Clerk	75 00	
J. E. Hobbie, Chief Ticket Clerk	30 00	
J. F. Doody, Assistant Ticket Clerk	18 00	
H. Bockrath, Assistant Ticket Clerk	18 00	
H. Bockrath, counting tickets	16 50	
Wm. Gett, Entry Clerk	50 00	
F. Folger, Entry Clerk	50 00	
Norton Bush, Superintendent Art Gallery	100 00	
Geo. Boyne, decorator	40 00	
J. H. Cooper, chief carpenter	96 00	
J. B. King, carpenter	72 00	
H. Welch, carpenter	72 00	
Geo. Williams, carpenter	81 00	
W. P. Hawkins, carpenter	10 50	
Wm. Johnson, carpenter	48 75	
Wm. Baker, carpenter	18 00	
M. J. Smith, carpenter	43 50	
Thos. O'Brien, gardener	48 00	
A. J. Muir, gas man	10 00	
Chris. Green, Jr., messenger boy	30 00	
A. Powers, messenger boy	4 50	
J. LaFrance, painter	16 50	
A. Keithley, doorkeeper	36 00	
W. H. Luther, doorkeeper	30 00	
J. C. Ledlie, doorkeeper	30 00	
Jas. Graham, watchman	15 00	
M. L. Crowell, watchman	20 00	
D. S. Jackson, watchman	33 00	
W. Craig, watchman	30 00	
Wm. Crump, watchman office	20 00	
M. O'Meara, fire watchman	33 00	
Amounts carried forward	$ 1,401 75	$36,785 58

Amounts brought forward	$ 1,401 75	$36,785 58
J. R. Saunders, carpenter	45 00	
Chas. Hoag, laborer	4 00	
A. J. Walker, laborer	5 00	
M. Campbell, laborer	25 00	
Geo. Laisuer, laborer	37 50	
Fred. Sackett, laborer	45 00	
H. Clock, laborer	60 00	
L. Bateman, laborer	26 25	
H. Boyle, laborer	51 25	
J. Laughlan, laborer	30 00	
A. Blum, laborer	46 25	
Thomas Kane, laborer	67 50	
C. F. Blodgett, laborer	60 00	
P. O. Meara, laborer	43 75	
W. K. Wise, laborer	11 25	
M. E. Jackson, ladies' room	12 00	
W. F. Griggs, art gallery	13 50	
		1,985 00

Interest.

July 1—Interest on draft of W. K. Vanderslice & Co.	$ 16 67	
Sept. 18—Interest on overdraft of D. O. Mills & Co.	37 07	
25—Interest on overdraft of D. O. Mills & Co.	56 90	
		110 64

D. O. Mills & Co.

Payment of overdraft of February	765 90

W. K. Vanderslice & Co.

July 1—Medals, etc., on account premium list, 1881	455 80

Race No. 11—1881.

Second money to John Mackey, on account liability of 1881	100 00
Cash, balance	231 93
Total	$40,434 85

COMPARATIVE STATEMENT.

Total receipts during Fair week, 1882	$21,523 95	
Total receipts during Fair week, 1881	21,287 70	
Excess in 1882 over 1881		$ 236 25

DISBURSEMENTS.

Expenses and improvements, 1882	$15,967 36	
Expenses and improvements, 1881	13,239 50	
Excess in 1882 over 1881		2,727 86
Cash premiums, 1882	$8,651 36	
Cash premiums, 1881	7,251 65	
Excess in 1882 over 1881		1,399 71
Races, 1882	$14,262 50	
Races, 1881	12,525 00	
Excess in 1882 over 1881		1,737 50

SUMMARY.

Disbursements.

Expenses and improvements in 1882 exceed 1881	$ 2,727 86	
Premiums in 1882 exceed 1881	1,399 71	
Races in 1882 exceed 1881	1,737 50	
		$ 5,865 07

Receipts.

Excess in 1882 over 1881	236 25
Total excess in 1882 over 1881	$ 5,628 82

RACES—1882.

Amount paid in purses, trotting	$ 8,070 00	
Amount received by entrance	4,895 00	
Net amount paid trotters		$ 3,175 00
Net amount paid runners		2,580 00
		$ 5,755 00
Pools, programmes, etc., netted		3,302 85
Net amount paid out at races		2,452 15

RECEIPTS AT PARK AND PAVILION.

1882.	Park.	Pavilion.
Sept. 11—Ticket sales	$2,269 00	$1,605 50
12—Ticket sales	1,735 75	841 55
13—Ticket sales	1,809 25	778 00
14—Ticket sales	2,887 25	1,181 45
15—Ticket sales	2,078 50	575 15
16—Ticket sales	903 75	427 50
18—Entry Clerks	381 00	290 00
Office	----------	339 00
Privileges	3,126 85	294 45
Totals	$15,191 35	$6,332 60

EXHIBITS AT THE FAIR, 1882.

ANNUAL EXHIBIT AT THE PARK.

FIRST DEPARTMENT.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
	CLASS I—THOROUGHBRED HORSES—STALLIONS.				
	Four years old and over.				
Sorrel	Sam Stephenson	Thad Stevens	Rifleman	W. M. Murray	Tulare
Brown	Nathan Combs	Lodi	Miami	Wm. Boots	Milpitas
Chestnut	Jim Brown	Foster	Flush	George Hearst	San Francisco
	Three Years Old.				
Brown	Bird Catcher	Brother to Modoc		W. M. Murray	Tulare
	Two Years Old.				
Chestnut	Berrian	Bazaar	Avail	W. L. Pritchard	Sacramento
	MARES.				
	Four Years Old and Over.				
Bay	Mollie H.	Wildidle	Mamie Hall	Wm. Boots	Milpitas
	Three Years Old.				
Bay	Lillie S.	Leinster	By Breckenridge	A. M. Otterback	Routiers
	Two Years Old.				
Sorrel ches't.	Young Flush	Leinster	Flush	J. B. Haggin	San Francisco
Ch., wh. mks.	Irene	Leinster	Irene Harding	J. B. Haggin	San Francisco

FIRST DEPARTMENT.—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
	One Year Old.				
Bay	Rosebella	King Alphonso	Miranda	J. B. Haggin	San Francisco
Bay	Joy	Lever	Alix	J. B. Haggin	San Francisco
Bay	Mariposa	Monarchist	Heliotrope	J. B. Haggin	San Francisco
Bay	Faustina	Imported Glenelg	Marmot	J. B. Haggin	San Francisco
Bay	Lina	King Alphonso	Titania	J. B. Haggin	San Francisco
Bay	Mileta	Lever	Malta	J. B. Haggin	San Francisco
Bay	Giulietta	Monarchist	Alert	J. B. Haggin	San Francisco
Chestnut	Hirondelle	Imported Glenelg	Susie Linwood	J. B. Haggin	San Francisco
Bay	Sweet Briar	Virgil	Impudence	J. B. Haggin	San Francisco
Bay	School Girl	Pat Malloy	Gleniune	J. B. Haggin	San Francisco
Brown	My Love	Virgil	Lightfoot	J. B. Haggin	San Francisco
Bay	La Favorita	Glenelg	Edeny	J. B. Haggin	San Francisco
	FAMILIES NOT THOROUGHBRED.				
	Stallion, other than Thoroughbred, with not less than Five of his Colts, Open to All.				
Bay	Admiral, and ten colts	Volunteer	Lady Pierson	S. S. Drake	Vallejo
	Dam, other than Thoroughbred, with not less than Two of her Colts.				
Ches't sorrel	Dollie	Tecumseh	St. Clair	Wm. Bandeen	Hicksville
	Selim	Napoleon 2d		Wm. Bandeen	Hicksville
	Tone	By Hambletonian		Wm. Bandeen	Hicksville
	CLASS II—HORSES OF ALL WORK—STALLIONS.				
	Four Years Old and Over.				
Gray	Pedro, Jr.	Pedro	Kentucky Whip	W. A. Munion	Dixon
Bay	Charlie	Charlie	Unknown	J. Rassett	Elk Grove
Bay	Byron	Charlie	Unknown	J. Rassett	Elk Grove
Bay	Bob	Charlie	Unknown	J. Rassett	Elk Grove
Bay	General Grant, Jr.	General Grant	Morgan mare	A. Belinda	Haywards
Brown	Montreal Telegraph	Champion	Blanche	W. R. Cummington	Nicolaus
Brown	Levi Slaggard	Cap Slaggard	Lucy	W. R. Cummington	Nicolaus
Bay	Prince	Sir William Wallace	Polly	E. Comstock	Sacramento
Bay	Frank Murphy	Tam O'Shanter	Thoroughbred Norman	A. Martin	Davis

Sorrel	Jo	Jo Daniels	Unknown	J. W. Chiles	Davis
Bay	Combination	Vibrator	Hambletonian	T. Van Vechten	Brighton
Chestnut	Admiral	Imported French coach stal'n.	Imported	J. B. Haggin	San Francisco
	Three Years Old.				
Iron gray	Prince	Clydesdale	Unknown	Wm. McClellan	Madison
Brown	John	Charlie	Unknown	J. Rassett	Elk Grove
Bay	Hamilton	California Star	Nelson	A. D. Miller	Brighton
	Two Years Old.				
Bay	Prince	Charlie	Unknown	J. Rassett	Elk Grove
Sorrel	May Boy	General Grant, Jr.	Dollie, by Belle	A. Belinda	Haywards
Black	Black Prince	Cr. Prince	Rink mare	P. J. Shafter	Olema
	One Year Old.				
Sorrel	Major Nelson	Chieftain	Nelson mare	G. W. Horn	Sutter Creek
Brown	Frank	General Grant, Jr.	By Rattler	A. Belinda	Haywards
Bay	Elijah Belmont	General Grant, Jr.	Belmont mare	A. Belinda	Haywards
	Under One Year Old.				
Bay	Rowdy Boy	General Grant, Jr.	Belmont mare	A. Belinda	Haywards
Dark bay	Butt Cut	General Grant, Jr.	Belmont mare	A. Belinda	Haywards
	MARES.				
	Four Years Old and Over.				
Bay	Lucy	Charlie	Unknown	J. Rassett	Elk Grove
Bay	Dollie	Unknown	Unknown	A. Belinda	Haywards
Black	Colie	John Nelson	Pollie	E. Comstock	Sacramento
Bay	Eve	Admiral	Unknown	S. S. Drake	Vallejo
Gray	Lucy Gray	Senator	Hambletonian	A. D. Miller	Brighton
Gray	Perch	Idol	Black Hawk and Messenger	A. D. Miller	Brighton
	Four Years Old and Over, with Colt.				
Black	Fly, and colt Louisa	John Justice (Clydesdale)	Kate	M. Wick	Oroville
	Two Years Old.				
Bay	Mary	Admiral	Unknown	S. S. Drake	Vallejo
	One Year Old.				
Sorrel	Abbottine	Abbotsford	Lena Bowles	B. E. Harris	San Francisco
Bay	Fanny	Franklin	Messenger	R. Brown	Brighton

FIRST DEPARTMENT.—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
	Sucking Colt.				
Brown	Lena	Leinster	Cora	E. Comstock	Sacramento
	CLASS III—DRAFT HORSES—STALLIONS.				
	Four Years Old and Over.				
Bay	Tam O'Shanter, Jr.	T. O'Shanter	Unknown	A. J. Ogden	Woodland
Black	Norman	Cupidon (Imp.)	Young American mare	J. Coonrod	Davisville
Bay	Tornado	St. Lawrence (Imp.)	Eureka (Imp.)	T. Skillman	Petaluma
Black	Highland Laddie	William Wallace	By Laboo	A. H. Thomassen	Routiers
Bay	Honest Tom	Tom Thumb	Maud	T. Williamson	Sacramento
Black	Conqueror	Conqueror	St. Lawrence mare	C. Porter	Marysville
Bay	St. Lawrence	Champ Bell Eyre	By St. Lawrence	H. W. Wilson	Nicolaus
Black	Black Prince	Imported		J. B. Haggin	San Francisco
	Three Years Old.				
Gray	Normandy Second	Normandy	Nellie	R. J. Merkley	Sacramento
Gray	Charlemagne	Duke de Chartres	Susie Rose	A. J. Pierce	Petaluma
Gray	Gray Eagle	Normandy	Black Maria	P. H. Murphy	Brighton
	Two Years Old.				
Gray	Monarch	Tornado	Polly	T. Skillman	Petaluma
Iron gray	Billie	Norman horse	Mary	E. Comstock	Sacramento
	One Year Old.				
Gray	Nimbus	Duke of Mayons	Clydesdale	R. J. Currey	Dixon
Bay	Model	Tornado	Lucy	T. Skillman	Petaluma
	Under One Year Old.				
Gray	Chief	Duke of Mayons	Mag	R. J. Currey	Dixon
Iron gray	Maje	Gray Eagle	Maud	E. Comstock	Sacramento
	MARES.				
	Four Years Old, with Colt.				
Brown	Mag and colt	Tam O'Shanter	Unknown	R. J. Currey	Dixon
Black	Nellie and colt	Lafayette	English draft mare	R. J. Merkley	Sacramento
Black	May and colt	Sir William Wallace	Polly	E. Comstock	Sacramento

	Four Years Old and Over.				
Gray	Fannie	Unknown	Unknown	C. Thodt	Dixon
Bay	Daisy	Norman	Unknown	C. Thodt	Dixon
Brown	Maud	Sir William Wallace	Polly	E. Comstock	Sacramento
	Three Years Old.				
Black	Lucy	Unknown	Unknown	C. Thodt	Dixon
	Two Years Old.				
Black	Fancheon	Normandy	Nellie	R. J. Merkley	Sacramento
	One Year Old.				
Bay	Gertrude	Tornado	Polly	T. Skillman	Petaluma
Bay	Lady St. Patrick	Highland Laddie	Unknown	A. H. Thomassen	Routiers
	Sucking Colts.				
Bay	Juanita	Sir Archer	Nellie	R. J. Merkley	Sacramento
Sorrel	Jennie	Highland Laddie	Unknown	A. H. Thomassen	Routiers
	WALKING MATCH FOR DRAFT HORSES.				
Bay	Honest Tom (weight, 1,600)	Tom Thumb	Maud	T. W. Williamson	Sacramento
Black	Conqueror (weight, 1,500)	Conqueror	St. Lawrence	C. Porter	Marysville
Bay	St. Lawrence (weight, 1,500)	Champ Bell Eyre	By St. Lawrence	H. W. Wilson	Nicolaus
	* CLASS IV—ROADSTERS—STALLIONS.				
	Four Years Old and Over.				
Sorrel	Don Castor	Elmo	Lady Emily	Jno. Dennen	Grass Valley
Chestnut	Jack Nelson	Jno. Nelson	Flag of Truce Messenger	H. Webster	Sacramento
Bay	Admar	Admiral	Bruna	A. T. Hatch	Suisun
Black	Killarney	Black Ralph	Eclipse mare	P. Fitzgerald	Woodland
Gray	Rustic	Wh. Hambletonian	Belmont	P. J. Shafter	Olema
Bay	Victor	Echo	By Woodburn	Wm. Rawson	Woodland
Black	Zula Chief	Mohawk Chief	Sallie Come Up	J. B. Haggin	San Francisco
Bay	Odd Fellow	Echo	Thoetis	W. K. Robinson	Santa Ana
Bay	Prompter	Blue Bull	Prairie Bird	M. W. Hicks	Florin
	Three Years Old.				
Bay	Fresno Boy	Monday	Unknown	W. M. Murray	Tulare
Sorrel	Sorrel Frank	Patchen	Belmont	W. M. Murray	Tulare

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* All animals over one year old competing for a premium in this class must be exhibited in harness.

FIRST DEPARTMENT.—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
Bay	Wm. W.	Washington	Rondo, by Signal	W. M. Murray	Tulare
Bay	Starling	Egmont	By Flaxtail	M. W. Hicks	Florin
	Two Years Old.				
Bay	Rival	Buccaneer	By Compromise, by Belmt.	A. M. Otterbach	Routier's Station
Bay	Harmony	Reliance	By Kentucky Hunter	J. M. Learned	Stockton
Sorrel	Almoore	Algona	Oregon mare	Wm. Ingram	Lemoore, Tulare
Bay	Argenta	Admiral	By Speculation	S. S. Drake	Vallejo
Bay	Standard	Admiral	By Mohawk	S. S. Drake	Vallejo
Roan	Judge Patterson	Nephew	By Chieftain	J. E. McCloud	Stockton
Gray	Young Bashaw	Buccaneer	Tecumseh and St. C.	A. D. Miller	Brighton
Brown	Privateer	Buccaneer	By Marion	M. W. Hicks	Florin
	One Year Old.				
Sorrel		Jack Nelson	Unknown	H. Webster	Sacramento
Sorrel		Jack Nelson	Unknown	H. Webster	Sacramento
Black	Cal. Chief	Buccaneer	Voltian	J. C. Hasty	Chico
Black	Chico	Buccaneer	Reno	J. C. Hasty	Chico
Bay	Ralph T.	Buccaneer	Harkaway	B. F. True	Chico
Brown		Sultan	Gertrude	L. J. Rose	San Gabriel
Bay	Aleck	Admiral	By Venture	S. S. Drake	Vallejo
Bay	Roscoe	Brigadier	Flora F.	A. L. Frost	Sacramento
	Sucking Colts.				
Chestnut	Ben T.	Singleton	Harkaway	B. F. True	Chico
Chestnut	Style	Del Sur	By Tenbroeck	B. E. Harris	San Francisco
Bay	Littleton	Arthurton	Smoothbriar	B. E. Harris	San Francisco
Bay	Amateur	Admiral	Mary	S. S. Drake	Vallejo
Black	Del Sur, Jr.	Del Sur	By Black Ralph	R. H. Newton	Woodland
	MARES.				
	Four Years Old.				
Blood Bay	Jennie St. Clair	Old St. Clair	By Lexington	G. W. Hancock	Sacramento
Bay	Lola Nelson	Jno. Nelson	Unknown	G. W. Hancock	Sacramento
Bay	Ollie Ray	Reliance	By Signal	J. M. Learned	Stockton
Brown	Kate	Dietz' St. Clair	By Tom Moore	S. Tutt	Cottonwood
Black	Fannie	Black Eagle	Black Maria	C. Younger	Forest Home

Bay	Nell	Vibrator	*Morgan*	P. Van Vechten	*Brighton*
Gray	Maggie A.	Tecumseh	Messenger	W. J. O'Brien	Sacramento
Chestnut	Pearl	Blue Bull	By Flaxtail	M. W. Hicks	Florin
	Three Years Old.				
Sorrel	Susie T.	Turtilotte	Dietz' St. Clair	S. Tutt	Cottonwood
Bay	Hazel Kirke	Brigadier	By Jim Brown	J. B. McDonald	Marysville
Bay	Sister	Admiral	Black Flora	S. S. Drake	Vallejo
	Two Years Old.				
Bay	Yuba Maid	Brigadier	Reese River	J. B. McDonald	Marysville
Gray	Lady Grey	Algona	By Jack Hawkins	J. B. Haggin	San Francisco
	One Year Old.				
Ch. Sorrel	Rose Abbott	Abbottsford	Young Rosedale	B. E. Harris	San Francisco
Bay	Flora	Admiral	Flora	S. S. Drake	Vallejo
Brown	Minnie Toomey	Adonis	Lady Brighton	M. Toomey	Brighton
Brown	Clara	Buccaneer	By Wayland Forest	M. W. Hicks	Florin
Bay	Cora	Buccaneer	By Blue Bull	M. W. Hicks	Florin
	Suckling Colts.				
Bay (Star)		Nutwood	Jennie St. Clair	G. W. Hancock	Sacramento
Bay	Theta	Nutwood	Lola Nelson	G. W. Hancock	Sacramento
Bay	Peggie	Admiral	By Goldfinder	S. S. Drake	Vallejo
	CLASS V—CARRIAGE HORSES.				
	Matched span Carriage Horses, owned and used by one person.				
Gray	Peanut and Popcorn	Young Nelson	Unknown	B. Madden	Dixon
Black	Frank and Charley	Challenge	Morgan mare	W. R. S. Foye	Sacramento
	CLASS VI—ROADSTER TEAMS.				
	Double Team Roadsters, owned and used as such by one person.				
Bay	Ralph Sisters	Black Ralph	Unknown	H. Stegall	Woodland
Gray	Jane }	Unknown	By Laboo	A. H. Thomassen	Routiers
Gray	Lena T. }	Hambletonian	Morgan Black Hawk	A. H. Thomassen	Routiers
	CLASS VII—STANDARD TROTTERS—STALLIONS.				
	Four Years Old and Over.				
Brown	Alaska	Electioneer	Lucy	J. B. Haggin	San Francisco

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Dam.	Owner.	Residence.
	On Year Old.				
Bay	Mt. Vernon	Nutwood	By Chieftain	J. A. McCloud	Stockton
	MARES.				
	Four Years Old and Over.				
Brown	Adalia	Fred Low	Addie Lee	E. H. Miller, Jr.	San Francisco
Bay	Woodbine	Electioneer	Woodbine	J. B. Haggin	San Francisco
	CLASS VIII—SADDLE HORSES.				
	Saddle Horses—Mares or Geldings.				
Brown	Mike Price	Irvington	Miss Price	B. E. Harris	San Francisco
Sorrel	Vanity	Belmont	Big Lize	B. E. Harris	San Francisco
Pinto	Pinto	Dick Turpin	Nellie	W. S. Enos	Davis
	CLASS IX—SWEEPSTAKES—STALLIONS.				
Bay	Echo	Rysdyke's Hambletonian	Magnolia	J. B. Haggin	San Francisco
Chestnut	Algona	Almont	Emma Kincaid	J. B. Haggin	San Francisco
	MARES.				
Black	Nellie	Lafayette	English draft	R. J. Merkley	Sacramento
Bay	Woodbine	Electioneer	Woodbine	J. B. Haggin	San Francisco
	JACKS.				
	Four Years Old and Over.				
Black	John Henry	Imp. Jack	Mammoth	W. A. Munion	Dixon
Black	Black Jack	Unknown	Unknown	J. Coonrod	Davisville
	Three Years Old.				
Black	Castilian	Sire John	Carlisle	L. U. Shippee	Stockton
	JENNIES.				
	Four Years Old and Over.				
Black	Duchess	Royal Duke	A Reveille jenny	L. U. Shippee	Stockton
Black	Beauty	Goliah	Black Warrior	L. U. Shippee	Stockton
	MULES.				
	Span of any Age—California Bred.				
Black	Coalie	Meritt's Jack	Unknown	N. Miner	Davisville
Brown	Jennie	Meritt's Jack	Unknown	N. Miner	Davisville

First Department—Continued.

Color.	Name.	Sire.	Owner.	Residence.
	CLASS I—DURHAM CATTLE—BULLS.			
	Three Years Old and Over.			
Red	6th Red Thorndale	Red Thorndale	R. J. Merkley	Sacramento
Red	2d Duke of Alameda	Master Maynard	C. Younger	Forest Home
Red	Major Butler (30242)	Crown Prince	M. Wick	Oroville
	Two Years Old.			
Red	3d Duke of Alameda	Master Maynard	C. Younger	Forest Home
Red	Garfield	Leopard	E. Comstock	Sacramento
	One Year Old.			
Red	Forest King	7th Red Thorndale	C. Younger	Forest Home
Red	4th Duke of Forest Home (43176)	2d Duke of Alameda (2941)	C. Younger	Forest Home
Red	Louan 27th	Louan 5th	M. Wick	Oroville
Red	Comet	6th Red Thornhill	P. H. Murphy	Brighton
	Calves.			
Red	5th Duke of Forest Home	2d Duke of Alameda	C. Younger	Forest Home
Red	8th Duke of Forest Home	2d Duke of Alameda	C. Younger	Forest Home
Red	7th Duke of Forest Home	2d Duke of Alameda	C. Younger	Forest Home
Red	Dexter	Major Butler	M. Wick	Oroville
Red	Roscoe	Major Butler	M. Wick	Oroville
Red	Red Raven 3d	Major Butler	M. Wick	Oroville
	COWS.			
	Two Years Old and Over.			
Roan	Edith Elkins	Lone Star	R. J. Merkley	Sacramento
Red (Star)	Edith	Amos Ladd	R. J. Merkley	Sacramento
Red	Red Edith	Duke of Sharon	R. J. Merkley	Sacramento
Red	2d Rose of Forest Home	Thorndale	C. Younger	Forest Home
Red	Red Dolly 2d	Airdrie	C. Younger	Forest Home
Red	Jesse Maynard	Master Maynard	C. Younger	Forest Home
Red	Gem	Crown Prince	M. Wick	Oroville
Red	Frantic Louan 1st	Golden Louan Duke (21580)	M. Wick	Oroville
Red	Ruby	Orlando (15050)	M. Wick	Oroville
Red	Miranda 14th	Monkey John (10504)	P. H. Murphy	Brighton

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Owner.	Residence.
	Two Years Old.			
Red	7th Rose of Forest Home	Red Thorndale	C. Younger	Forest Home
Red	Oxford Rose 3d	Red Thorndale	C. Younger	Forest Home
Red	Frantic Louan 24th	Golden Louan Duke	M. Wick	Oroville
	One Year Old.			
Red	Jane Eyre	6th Red Thorndale	R. J. Merkley	Sacramento
Red	Ruby 2d	6th Red Thorndale	R. J. Merkley	Sacramento
Red	Red Dollie 11th	Red Thorndale	C. Younger	Forest Home
Red	9th Rose of Forest Home	Red Thorndale	C. Younger	Forest Home
Red	5th Louan of Forest Home	Unknown	C. Younger	Forest Home
Red	Matilda 1st	Major Butler	M. Wick	Oroville
Red	Frantic Louan 33d	Louan 5th (28941)	M. Wick	Oroville
Red	Rosolaca	Golden Louan Duke	M. Wick	Oroville
Red	Matilda 2d	Major Butler	M. Wick	Oroville
	Heifer Calves.			
Red	10th Rose of Forest Home	2d Duke of Alameda	C. Younger	Forest Home
Red	Red Dollie 14th	2d Duke of Alameda	C. Younger	Forest Home
Red	Miranda 15th	6th Red Thornhill	P. H. Murphy	Brighton
	ALDERNEY, JERSEY, AND GUERNSEY—BULLS.			
	Three Years Old and Over.			
Bl. m'se and w.	Dan Hinkley, Jr. (Jersey)	D. Hinkley	J. W. Crites	San José
Solid	Buffalo Bill (Jersey)	Keystone	Robt. Beck	San Francisco
Solid	Victor of Y. B. (Jersey)	Imported	Hy Pierce	San Francisco
Or. F. and wh.	Champion of G. (Guernsey)	Imported	Hy Pierce	San Francisco
Gray	Jersey Prince (Jersey)	Paragon	R. Noell	Grass Valley
Solid	General Grant (Jersey)	Paragon	Jas. Askew	El Dorado
	Two Years Old.			
Solid	Ingomar (Jersey)	Buffalo Bill	Bobt. Beck	San Francisco
Solid	Jas. Hayward (Jersey)	Modoc	Hy Pierce	San Francisco
Gray and wh.	Commodore (Jersey)	Paragon	R. Noell	Grass Valley
Fawn	Garfield (Jersey)	Keystone 2d	J. Lyon	Placerville

	One Year Old.			
Solid	Jersey (Jersey)	Hatch's Bull	Wm. Hook	Sacramento
Solid	Fred Baker (Jersey)	Fernando (1254)	P. Stanton	Sacramento
Solid	William of Scituate (Jersey)	Black Defiance	Hy Pierce	San Francisco
Solid	Electric of Y. B. (Jersey)	Victor of Yerba Buena	Hy Pierce	San Francisco
Solid	1st Duke of El Dorado (Jersey)	Gen. Grant	J. Askew	El Dorado
	Bull Calves.			
Fawn and wh.	Andy (Jersey)	Blair's Bull	Wm. Hook	Sacramento
Squirrel Gray	Jersey Duke (Jersey)	Hayward Bull	Robt. Beck	San Francisco
Solid	——— (Jersey)	Buffalo Bill	Robt. Beck	San Francisco
Fawn and wh.	George (Jersey)		P. Stanton	Sacramento
Solid	Shotover of Y. B. (Jersey)	Victor of Yerba Buena	Hy Pierce	San Francisco
Solid	Don of Y. B. (Jersey)	Victor of Yerba Buena	Hy Pierce	San Francisco
O. F. and wh.	Lorne of Y. B. (Guernsey)	Champion	Hy Pierce	San Francisco
Gray and wh.	Jack (Jersey)	Jersey Prince	R. Noell	Grass Valley
	COWS.			
	Three Years Old and Over.			
Fawn	Pauline (Jersey)	Jaundyce	Robert Beck	San Francisco
Deep fawn	Nora (Jersey)	Buffalo Bill	Robert Beck	San Francisco
Solid	Ione of Sacramento (Jersey), 5220	Fernando (1254)	P. Stanton	Sacramento
Solid	Cleopatra (Jersey), 6741	Fernando (1254)	P. Stanton	Sacramento
Solid	Clio of Sacramento (Jersey), 9921	Fernando (1254)	P. Stanton	Sacramento
Solid	Bertie (Jersey), 9922	Romeo (3030)	P. Stanton	Sacramento
Solid	Maid of Oakland (Jersey)	Volunteer	Hy Pierce	San Francisco
Solid	Blanche (Jersey)	Jefferson	Hy Pierce	San Francisco
Solid	Eve, imported (Jersey)	Unknown	Hy Pierce	San Francisco
Solid	Mon. Plaiser of Y. B. (Jersey)	Imported	Hy Pierce	San Francisco
Solid	Princess 4th (Jersey)	Orphan	Hy Pierce	San Francisco
Solid	Yerba Buena (Jersey)	Victor	Hy Pierce	San Francisco
Solid	Fairy of Y. B. (Jersey)	Imported	Hy Pierce	San Francisco
Fawn and wh.	Bloomer 2d (Jersey)	Orphan	Hy Pierce	San Francisco
O. F. and wh.	Lizzie of G. (Guernsey)	Imported	Hy Pierce	San Francisco
O. F. and wh.	Daisy of G. (Guernsey)	Imported	Hy Pierce	San Francisco
O. F. and wh.	Lassie of G. (Guernsey)	Imported	Hy Pierce	San Francisco
O. F. and wh.	Lillie of G. (Guernsey)	Imported	Hy Pierce	San Francisco
Gray	Katie (Jersey)	Imported	R. Noell	Grass Valley
Fawn	Fannie (Jersey)	Imported	R. Noell	Grass Valley
Solid	Topsy (Jersey)	Imported	R. Noell	Grass Valley
Fawn and wh.	Lucy (Jersey)	Paragon	R. Noell	Grass Valley
Fawn	Jersey Belle (Jersey)	Surprise	J. Askew	El Dorado

FIRST DEPARTMENT—Continued.

Color.	Name.	Sire.	Owner.	Residence.
Fawn	Princess (Jersey)	Surprise	J. Askew	El Dorado
Fawn	Buttercup (Jersey)	Surprise	J. Askew	El Dorado
	Two Years Old.			
Solid	Ida 6th (Jersey)	Buffalo Bill	Robert Beck	San Francisco
Solid	Ida 7th (Jersey)	Buffalo Bill	Robert Beck	San Francisco
	Anemone (Jersey), 15623	Fernando	P. Stanton	Sacramento
Fawn	Belle (Jersey)	Buffalo Bill	F. P. Lowell	Sacramento
Solid	Miss Murdoch 2d (Jersey)	Touchstone	Robert Beck	San Francisco
Fawn	Nellie (Jersey)	Paragon	R. Noell	Grass Valley
	One Year Old.			
D. Or. & white	Young Dinah (Jersey)	Hayward Bull	Robert Beck	San Francisco
	Queen of Sacramento (Jersey), 15624	Romeo	P. Stanton	Sacramento
Fawn	Rose Bassett (Jersey)	Buffalo Bill	A. Sanders	Sacramento
Solid	Eve of Y. B. 3d (Jersey)	Victor	Hy Pierce	San Francisco
Solid	Coquette of Y. B. 2d (Jersey)	Victor	Hy Pierce	San Francisco
Solid	Flora of Y. B. 2d (Jersey)	Victor	Hy Pierce	San Francisco
Solid	Carrie of Y. B. 2d (Jersey)	Victor	Hy Pierce	San Francisco
Solid	Maud (Jersey)	Paragon	R. Noell	Grass Valley
Solid	Queenie (Jersey)	Bunker	J. Lyon	Placerville
Solid	1st Duchess of El Dorado (Jersey)	General Grant	J. Askew	El Dorado
	Heifer Calves.			
	Olita (Jersey), 15625	Romeo	P. Stanton	Sacramento
Solid	Coomassie of Y. B. (Jersey)	Victor	Hy Pierce	San Francisco
Solid	Mignon of Y. B. (Jersey)	Victor	Hy Pierce	San Francisco
Solid	Ata of Y. B. (Jersey)	Victor	Hy Pierce	San Francisco
Solid	Louisa of Y. B. (Jersey)	Jefferson	Hy Pierce	San Francisco
Fawn	No name (Jersey)	J. Prince	R. Noell	Grass Valley
Fawn	No name (Jersey)	Paragon	R. Noell	Grass Valley
Fawn	No name (Jersey)	Paragon	R. Noell	Grass Valley
	DEVONS—BULLS.			
	Three Years Old and Over.			
Red	Ben Butler	Blucher	R. McEnespy	Chico

	COWS.			
	Three Years Old and Over.			
Red	Mayflower	Blucher	R. McEnespy	Chico
Red	Nancy	Blucher	R. McEnespy	Chico
Red	Julia	Blucher	R. McEnespy	Chico
Red	Queen	Blucher	C. M. Bryant	Chico
	Two Years Old.			
Red	Maud	Ben Butler	R. McEnespy	Chico
	One Year Old.			
Red	Spry	Ben Butler	R. McEnespy	Chico
	Heifer Calf.			
Red	Trixie	Ben Butler	R. McEnespy	Chico
	AYRSHIRES—BULLS.			
	Three Years Old and Over.			
Red and wh.	Archie	Adonis (2089)	George Bement	Redwood City
	Two Years Old.			
Red	Lindo	General Sherman (2091)	George Bement	Redwood City
	One Year Old.			
Red and wh.	Macbeth	Melancthon Callaghan	George Bement	Redwood City
	Bull Calf.			
Red and wh.	Malcomb	Archie	George Bement	Redwood City
	COWS.			
	Three Years Old and Over.			
Red and wh.	Stellita	Hiram (1194)	George Bement	Redwood City
Red and wh.	Ethel Brown	Scarboro Chief (1706)	George Bement	Redwood City
Red and wh.	Elaine	Adonis (2089)	George Bement	Redwood City
	Two Years Old.			
Red and wh.	Stellinita	Adonis (2089)	George Bement	Redwood City
	One Year Old.			
Red and wh.	Sultana	Melancthon Callaghan	George Bement	Redwood City
	Heifer Calf.			
Red and wh.	Sybil	Melancthon Callaghan	George Bement	Redwood City

First Department—Continued.

Color.	Name.	Sire.	Owner.	Residence.
	HERDS—DURHAM.			
	Herd of Thoroughbred Durham Cattle over Two Years Old, to consist of One Male and Four Females, owned by one person.			
	2d Duke of Alameda	Master Maynard	C. Younger	Forest Home
	2d Rose of Forest Home			
	Red Dollie 2d			
	Jesse Maynard			
	Oxford Rose			
	Major Butler		M. Wick	Oroville
	Gem			
	Fr. Louan 1st			
	Ruby			
	Fr. Louan 24th			
	Herd of Thoroughbred Durham Cattle under Two Years, to consist of One Male and Four Females, owned by one person.			
	Forest King		C. Younger	Forest Home
	5th Louan of Forest Home			
	9th Rose of Forest Home			
	Red Dollie 11th			
	10th Rose of Forest Home			
	Louan 27th		M. Wick	Oroville
	Matilda 1st			
	Fr. Louan 33d			
	Rosalaca 1st			
	Matilda 2d			
	HERDS—JERSEYS.			
	Herd of Thoroughbred Jersey Cattle over Two Years Old, to consist of One Male and Four Females, owned by one person.			
	Victor of Y. B.	Imported	Hy Pierce	San Francisco
	Bloomer of Y. B. 2d			
	Fanny of Y. B.			
	Mon. Plaiser of Y. B.			
	Maid of Oakland			

	Jersey Prince	Paragon	R. Noell	Grass Valley
	Katie			
	Fannie			
	Topsy			
	Lucy			
	Buffalo Bill	Keystone	Robert Beck	San Francisco
	Pauline			
	Nora			
	Ida 6th			
	Ida 7th			
	Herd of Thoroughbred Jersey Cattle under Two Years, to consist of One Male and Four Females, owned by one person.			
	William of Scituate	Black Defiance	Hy Pierce	San Francisco
	Carrie of Y. B. 2d			
	Flora of Y. B. 2d			
	Coquette of Y. B. 2d			
	Eva of Y. B. 3d			
	HERDS—GUERNSEYS.			
	Herd of Thoroughbred Guernsey Cattle of any age, to consist of One Male and Four Females, owned by one person.			
	Champion of G.	Imported	Hy Pierce	San Francisco
	Lulu of G.			
	Lassie of G.			
	Daisy of G.			
	Lizzie of G.			
	HERDS—DEVONS.			
	Herd of Thoroughbred Devon Cattle of any age, to consist of One Male and Four Females, owned by one person.			
	Ben Butler	Blucher	R. McEnespy	Chico
	Mayflower			
	Nancy			
	Julia			
	Maud			

First Department—Continued.

Color.	Name.	Sire.	Owner.	Residence.
	HERDS—AYRSHIRES.			
	Herd of Thoroughbred Ayrshire Cattle of any age, to consist of One Male and Four Females, owned by one person.			
	Archie		George Bement	Redwood City
	Stellita			
	Lady Merryton			
	Ethel Brown			
	Elaine			
	CLASS II—GRADED CATTLE—COWS.			
	Three Years Old and Over.			
Red	Rose	Amos Ladd	R. J. Merkley	Sacramento
Red and white	Susie	Bryte's Ayrshire	R. J. Merkley	Sacramento
Red	Bettie	Monkey John	E. Comstock	Sacramento
Red	Jane	Keystone 2d	J. Lyon	Placerville
	Two Years Old.			
Red and fawn	Miss Munger, No. 2	Buffalo Bill	Robert Beck	San Francisco
Red	Chub	Leopard	E. Comstock	Sacramento
	One Year Old.			
Or. and white	Miss Munger, No. 3	Buffalo Bill	Robert Beck	San Francisco
Red	Cherry	Leopard	E. Comstock	Sacramento
Brown	Blossom	Duke of Brighton	P. H. Murphy	Brighton
	Heifer Calf.			
Red	Pink	Gen. Grant	J. Lyon	Placerville
	CLASS III—SWEEPSTAKES—BULLS.			
	Bull of any Age or Breed.			
Red	2d Duke of Alameda (Durham)	Master Maynard	C. Younger	Forest Home
Red	Major Butler	Orlando (15050)	M. Wicks	Oroville

	Cow of any Age or Breed.			
Red	Jessie Maynard (Durham)	Master Maynard	C. Younger	Forest Home
Red	Gem	Crown Prince	M. Wicks	Oroville
Red	Bloomer 2d	Orphan	Hy Pierce	San Francisco
	Bull and Three of his Calves under One Year Old.			
Red	2d Duke of Alameda		C. Younger	Forest Home
Red	10th Rose of Forest Home			
Red	Red Dolly 14th			
Red	8th Duke of Forest Home			
Red	Major Butler		M. Wicks	Oroville
Red	Dexter			
Red	Roscoe			
Red	Red Raven 3d			
	MILCH COWS.			
	Milch Cow of any Age or Breed.			
Br. and white	Lady Merryton		George Bement	Redwood City
Fawn	Jersey Belle	Surprise	J. Askew	El Dorado
Fawn	1st Duchess of El Dorado	Gen. Grant	J. Askew	El Dorado
	FAT CATTLE—COWS.			
	Fattest Cow of any Age or Breed.			
Red	Red Dollie	Thorndale	C. Younger	Forest Home
Red	Jessie Maynard	Master Maynard	C. Younger	Forest Home
Red	Gem	Crown Prince	M. Wicks	Oroville

First Department—Continued.

SHEEP.

Name.	Owner.	Address.
CLASS I—FRENCH MERINOS—RAMS.		
One Year Old and Under Two.		
Excelsior	J. R. Branton	Reno
CLASS II—SPANISH MERINOS—RAMS.		
Two Years Old and Over.		
Sprightly	J. H. Strowbridge	Haywards
Long Wool	F. Bullard	Woodland
One Year Old and Under Two.		
Comet	J. H. Strowbridge	Haywards
Snowflake	F. Bullard	Woodland
Lambs.		
Three ram lambs	J. H. Strowbridge	Haywards
Three ram lambs	F. Bullard	Woodland
EWES.		
Two Years Old and Over.		
Pen of five ewes	J. H. Strowbridge	Haywards
Pen of five ewes	F. Bullard	Woodland
One Year Old and Under Two.		
Pen of five ewes	J. H. Strowbridge	Haywards
Pen of five ewes	F. Bullard	Woodland
Lambs.		
Pen of five lambs	J. H. Strowbridge	Haywards
Pen of five lambs	F. Bullard	Woodland
Ram and Five of his Lambs.		
Sprightly and five lambs	J. H. Strowbridge	Haywards
Long Wool and five lambs	F. Bullard	Woodland
CLASS III—COTSWOLD, SOUTHDOWN, LEICESTERSHIRE, LINCOLNSHIRE, AND SHROPSHIRE—RAMS.		
Two Years Old and Over.		
Salopian (Shropshire)	J. B. Hoyt	Suisun
Hancock (Cotswold)	C. Younger	Forest Home
——— (Cotswold)	C. Younger	Forest Home
One Year Old and Under Two.		
Sonoma (Southdown)	Geo. Bement	Redwood City
Duke (Shropshire)	J. B. Hoyt	Suisun
——— (Cotswold)	C. Younger	Forest Home
——— (Cotswold)	C. Younger	Forest Home
Lambs.		
Three lambs (Cotswold)	C. Younger	Forest Home
EWES.		
Two Years Old and Over.		
Pen of five ewes	J. B. Hoyt	Suisun
Pen of five ewes	C. Younger	Forest Home
One Year Old and Under Two.		
Pen of five ewes	J. B. Hoyt	Suisun
Pen of five ewes	C. Younger	Forest Home
Lambs.		
Pen of five lambs	C. Younger	Forest Home

FIRST DEPARTMENT—Continued.

Name.	Owner.	Address.
Ram and Five of his Lambs.		
Hancock and five lambs	C. Younger	Forest Home
CLASS IV—A CROSS BETWEEN ANY TWO THOROUGHBREDS.		
Two Years Old and Over.		
Pen of five ewes	J. B. Hoyt	Suisun
Pen of five ewes	J. B. Hoyt	Suisun
SWEEPSTAKES—RAMS.		
Sprightly and five lambs	J. H. Strowbridge	Haywards
Long Wool and five lambs	F. Bullard	Woodland

SWINE.

Name.	Owner.	Address.
CLASS I—BERKSHIRE—BOARS.		
Two Years Old and Over.		
Taggart	Thos. Waite	Brighton
Canute 2d (3221)	John Rider	Sacramento
Jolly (2465)	John Rider	Sacramento
Prince	J. Kennedy	Sacramento
Under Two Years.		
Brigadier (4019)	John Rider	Sacramento
Six Months Old and Under One Year.		
Nimrod (4021)	John Rider	Sacramento
BREEDING SOWS—Imported.		
Pacific Queen	Thos. Waite	Brighton
Maud Hamilton (5690)	John Rider	Sacramento
Peerless C. (7558)	John Rider	Sacramento
Pair of Pigs, Under Ten Months Old.		
Nimbus and Laguna	John Rider	Sacramento
Blackbird and Dollie	John Rider	Sacramento
CLASS III—POLAND CHINA—BOARS.		
Under Two Years Old.		
King of Bounegview (991 A. P. C. R.)	E. Gallup	Hanford
Gold Dust (993)	E. Gallup	Hanford
Six Months Old and Under One Year.		
John	James Melvin	Davisville
Black Boy	E. Gallup	Hanford
BREEDING SOWS.		
Daisy	Joseph Melvin	Davisville
California Black Bess (3128)	E. Gallup	Hanford
Cantilena (3130)	E. Gallup	Hanford
Six Months Old and Under One Year.		
Daisy	Joseph Melvin	Davisville
Young Cherry	E. Gallup	Hanford
Bell Dona	E. Gallup	Hanford
Pair of Pigs, Under Ten Months Old.		
Vindego and California IXL	E. Gallup	Hanford
One pair	James Melvin	Davisville
Nimrod and Jewel	E. Gallup	Hanford
Jehew and Cherry	E. Gallup	Hanford

FIRST DEPARTMENT—Continued.

Name.	Owner.	Address.
SWEEPSTAKES.		
Boar of any Age or Breed.		
Commodore (Berkshire), 1525	John Rider	Sacramento
Sow of any Age or Breed.		
Maud Hamilton (Berkshire), 5690	John Rider	Sacramento
Pigs of any Age or Breed.		
Pen of six pigs	Joseph Melvin	Davisville
Pen of six pigs	John Rider	Sacramento
Pen of six pigs	M. Sprague	Sacramento
Families, all of the same Breed, consisting of One Boar, Two Sows, and Six Pigs of any Age.		
Canute (Berkshire), 3221 Peerless C. (7558) Peerless D. (8245) Six pigs	John Rider	Sacramento
John (Poland China) Daisy Bessie Six pigs	James Melvin	Davisville

POULTRY.

Exhibitor.	Residence.	Articles.
		Chickens.
T. D. Morris	Sonoma	Two pairs Brahmas, one light, one dark
R. G. Head	Napa	One trio Brahmas, light
Thomas Waite	Brighton	One pair Cochins, imp. Partridge
J. Coonrod	Davisville	Two trios Cochins, Partridge, 1 imported, 1 California.
T. D. Morris	Sonoma	Three prs Cochins, 1 Bl'k, 1 Buff, 1 Partridge
Thomas Waite	Brighton	One pair Hamburgs, Silver Spangled
T. D. Morris	Sonoma	Two pairs Hamburgs, 1 S. Spangled, 1 Bl'k
Thomas Waite	Brighton	One pair Leghorns, Brown
Thomas Waite	Brighton	One pair Leghorns, White
T. D. Morris	Sonoma	One pair Leghorns, White
R. G. Head	Napa	One pair Leghorns, Black
A. L. Tryon	Sacramento	One pair Leghorns, White
T. Waite	Brighton	One pair Black Spanish, White-faced
F. S. George	Sacramento	One pair Black Spanish, White-faced
T. D. Morris	Sonoma	One pair Black Spanish, White-faced
E. Gallup	Hanford	One pair Dorkings
T. D. Morris	Sonoma	One pair Dominiques
Thomas Waite	Brighton	One pair imported Plymouth Rocks
T. D. Morris	Sonoma	Two prs Plymouth Rocks, 1 pr imported
R. G. Head	Napa	Two pairs Plymouth Rocks
A. L. Tryon	Sacramento	One pair Plymouth Rocks
Thomas Waite	Brighton	One pair imported French Fowls, Houdan
T. D. Morris	Sonoma	One pair imported French Fowls, Houdan
Thomas Waite	Brighton	One pair imported Seabright Bantams, Golden.
J. E. Roberts	Sacramento	One pair Seabright Bantams
T. D. Morris	Sonoma	One pair Seabright Bantams, Golden
T. D. Morris	Sonoma	One pair Game Bantams
		Turkeys.
T. D. Morris	Sonoma	One pair turkeys
R. G. Head	Napa	One pair turkeys, Bronze

First Department—Continued.

Exhibitor.	Residence.	Articles.
		Ducks.
Thomas Waite	Brighton	One pair ducks, Pekin
G. B. Cosby	Sacramento	One trio ducks, Pekin
R. G. Head	Napa	Two trio ducks, 1 Pekin, 1 Rouen
		Geese.
Thomas Waite	Brighton	One pair geese, Toulouse
T. D. Morris	Sonoma	Three prs geese, 1 Toul., 1 Bremen, 1 China

MISCELLANEOUS ENTRIES IN LIVE STOCK DEPARTMENT.

Exhibitor.	Residence.	Articles.
J. Coonrod	Davisville	One pair peacocks
J. Coonrod	Davisville	One game cock
C. Younger	Forest Home	Black gelding, by Young Consternation, and Whisper, by Hercules.
George W. Harlow		Dark iron-gray gelding Tiger, by Pritchard's Champion; dam, Morgan Rattler; and light gray gelding Frank.
T. D. Morris	Sonoma	One pair white Guineas
R. G. Head	Napa	Six light Brahma chickens
R. G. Head	Napa	Six Brown Leghorn chickens
A. D. Miller	Brighton	Bay gelding Charlie, by Nelson, Jr.; dam, St. Clair and Hambletonian.
B. C. Trefry		Black gelding Black Prince, ped. unknown
J. T. Carey	Sacramento	Black roadster team, Forest and Buchanan

SECOND DEPARTMENT.

CLASS I—MACHINERY, ENGINES, ETC.

Exhibitor.	Residence.	Articles.
Baker & Hamilton	Sacramento	Steam engine, California make
Jos. Enright	San José	Steam engine, California make, portable straw burner.
Chas. W. Caryl	San Francisco	Climax Fire Extinguisher
Huntington, Hopkins & Co.	Sacramento	Saw gummer
F. M. McKeever	Sacramento	Steam engine, California make

CLASS II—AGRICULTURAL MACHINES.

FIRST DIVISION.

Exhibitor.	Residence.	Articles.
Souney Bros.	Sacramento	Boss harrow tooth
A. F. Lashells	Biggs, Butte County	Cylinder and concave tooth for separator
Holman, Stanton & Co.	Sacramento City	American cider mill
Holman, Stanton & Co.	Sacramento City	Tiffin one-horse hay rake

SECOND DEPARTMENT—Continued.

Exhibitor.	Residence.	Articles.
Geo. A. Davis & Co.	San Francisco	Thrashing machine
Geo. A. Davis & Co.	San Francisco	Horse hay rake
Seymour, Sabin & Co.	Oakland	Thrashing machine
Seymour, Sabin & Co.	Oakland	Sweep horse-power
Baker & Hamilton	Sacramento	General display agricultural machinery
Baker & Hamilton	Sacramento	Thrashing machine
Baker & Hamilton	Sacramento	Cider mill and press
Baker & Hamilton	Sacramento	Horse hay rake
Baker & Hamilton	Sacramento	Hay and straw cutter
Baker & Hamilton	Sacramento	Hand corn sheller
Baker & Hamilton	Sacramento	Post hole auger
Baker & Hamilton	Sacramento	Vegetable cutter
Benicia Agricultural Works	Benicia	General display agricultural machinery
Root & Neilson	Sacramento	Hay press
W. P. Prall	Napa	Sulky horse rake

CLASS III—AGRICULTURAL MACHINES.

SECOND DIVISION.

Exhibitor.	Residence.	Articles.
A. La Jeunesse	San Francisco	Automatic harrow
Holman, Stanton & Co.	Sacramento	Cahoon broadcast sowing machine
Holman, Stanton & Co.	Sacramento	Empire mowing machine
Holman, Stanton & Co.	Sacramento	New mower
A. W. Lockhart	Sacramento	Self-feeder and elevator
W. A. Howard	Dixon	Howard vibrating harrow
John D. Winters	Davisville	Derrick for stacking grain
John D. Winters	Davisville	Nets for header wagon stacking grain
John D. Winters	Davisville	Hay-pitching machine
George A. Davis	San Francisco	Wheat drill, two-horse
George A. Davis	San Francisco	Grain broadcast sowing machine
George A. Davis	San Francisco	Self-raking machine
George A. Davis	San Francisco	Reaping machine
George A. Davis	San Francisco	Mowing machine
George A. Davis	San Francisco	Self-binding harvester
George A. Davis	San Francisco	Harrow
George A. Davis	San Francisco	One-horse cultivator
George A. Davis	San Francisco	Cultivator
George A. Davis	San Francisco	Horse hoe
George A. Davis	San Francisco	Double shovel plow
Seymour, Sabin & Co.	Oakland	Mowing machine
Seymour, Sabin & Co.	Oakland	One-horse cultivator
Seymour, Sabin & Co.	Oakland	Double shovel plow
E. W. Mills	Oakland	Victor mowing machine
John W. Rush	Stockton	Spring-tooth sulky harrow
Baker & Hamilton	Sacramento	Two-horse wheat drill
Baker & Hamilton	Sacramento	Self-raking reaping machine
Baker & Hamilton	Sacramento	Reaping machine
Baker & Hamilton	Sacramento	Mowing machine
Baker & Hamilton	Sacramento	Combined reaper and mower
Baker & Hamilton	Sacramento	Corn planter, horse-power
Baker & Hamilton	Sacramento	Corn planter, hand-power
Baker & Hamilton	Sacramento	Potato planter
Baker & Hamilton	Sacramento	One-horse cultivator
Baker & Hamilton	Sacramento	Horse hoe
Baker & Hamilton	Sacramento	Cultivator
Benicia Agricultural Works	Benicia	Header
Benicia Agricultural Works	Benicia	Grain broadcast sowing machine
Benicia Agricultural Works	Benicia	Harrow
Benicia Agricultural Works	Benicia	One-horse cultivator
Benicia Agricultural Works	Benicia	Cultivator
William Gutenberger	Sacramento	Roller and field crusher

Second Department—Continued.

Exhibitor.	Residence.	Articles.
Brewster & Co.	Galt	Mitchell patent derrick
Huntington, Hopkins & Co.	Sacramento	Gopher traps
Huntington, Hopkins & Co.	Sacramento	Post hole augers
Huntington, Hopkins & Co.	Sacramento	Vegetable cutter
Huntington, Hopkins & Co.	Sacramento	Lawn sprinkler
B. F. Wellington	San Francisco	President lawn mower
D. Howser	Stockton	Combined thrasher and header

CLASS IV.

Exhibitor.	Residence.	Articles.
Holman, Stanton & Co.	Sacramento	Little Chief fanning mill
Woodard & Pane (California Gate Company)	West Oakland	Residence and farm gate
D. G. Paul	Livermore	U. S. Star self-governing windmill
M. L. Merry	Chico	Feed mill
Seymour, Sabin & Co.	Oakland	Grain cleaner attachment
E. W. Brown	Davisville	Combination beam scales
John Klees	Sacramento	Farming mill
James Stanley	San José	Compton's patent automatic gate
H. Brightman	Sacramento	Story's Excelsior gate
Wm. B. Williams	Oakland	Combined hinge and roller, for farm gate
Benicia Agricultural Works	Benicia	Farm feed mill
T. E. Martin	San José	Centennial windmill
T. S. Bailey	San Francisco	California Chief grain cleaner, steam-power
T. S. Bailey	San Francisco	California Chief grain cleaner, hand-power
C. H. Laufkotter	Sacramento	Bottle cooler
B. N. Bugby	Sacramento	Butter cooler
G. W. Herr		Boss May windmill

CLASS V.

Exhibitor.	Residence.	Articles.
Holman, Stanton & Co.	Sacramento	Cabbage cutter
Holman, Stanton & Co.	Sacramento	Champion farm road scraper
Geo. A. Davis & Co.	San Francisco	Display of haying and harvesting tools
Seymour, Sabin & Co.	Oakland	Farm road scraper
Baker & Hamilton	Sacramento	Display of haying and harvesting tools
Baker & Hamilton	Sacramento	Farm road scraper
Baker & Hamilton	Sacramento	Garden seed drill
Wm. Gutenberger	Sacramento	Apparatus for raising water for irrigating or mining.
Huntington, Hopkins & Co.	Sacramento	Cabbage cutter
Huntington, Hopkins & Co.	Sacramento	Sausage meat cutter and stuffer
Huntington, Hopkins & Co.	Sacramento	Clothes ringer

CLASS VI.

Exhibitor.	Residence.	Articles.
Benicia Agricultural Works	Benicia	Gang plow
Benicia Agricultural Works	Benicia	Sulky plow
Benicia Agricultural Works	Benicia	Stubble plow
Benicia Agricultural Works	Benicia	Sod plow
Benicia Agricultural Works	Benicia	Steel plow
Benicia Agricultural Works	Benicia	Subsoil plow

SECOND DEPARTMENT—Continued.

Exhibitor.	Residence.	Articles.
Benicia Agricultural Works	Benicia	Side hill plow
Benicia Agricultural Works	Benicia	One-horse plow
Benicia Agricultural Werks	Benicia	Open ditching plow
Benicia Agricultural Works	Benicia	Plow for all purposes
Holman, Stanton & Co.	Sacramento	Cassady gang plow
Holman, Stanton & Co.	Sacramento	Cassady sulky plow
Holman, Stanton & Co.	Sacramento	Oliver chilled stubble plow
Holman, Stanton & Co.	Sacramento	Oliver chilled sod plow
Holman, Stanton & Co.	Sacramento	Oliver steel plow
Holman, Stanton & Co.	Sacramento	Oliver one-horse plow
Holman, Stanton & Co.	Sacramento	Oliver one-horse plow
Holman, Stanton & Co.	Sacramento	Oliver one-horse plow
Holman, Stanton & Co.	Sacramento	Oliver one-horse plow
Holman, Stanton & Co.	Sacramento	Oliver best chilled plow
Holman, Stanton & Co.	Sacramento	Oliver general or all purpose plow
Holman, Stanton & Co.	Sacramento	Peoria Company steel plow
Holman, Stanton & Co.	Sacramento	Peoria Company steel plow
Holman, Stanton & Co.	Sacramento	Peoria Company steel plow
Holman, Stanton & Co.	Sacramento	Imported dynameter
Isaac Burke	Sacramento	Sulky plow
George A. Davis & Co.	San Francisco	Sulky plow
George A. Davis & Co.	San Francisco	Gang plow
George A. Davis & Co.	San Francisco	Sulky plow
George A. Davis & Co.	San Francisco	Stubble plow
George A. Davis & Co.	San Francisco	Sod plow
Goorge A. Davis & Co.	San Francisco	Steel plow
George A. Davis & Co.	San Francisco	One-horse plow
George A. Davis & Co.	San Francisco	Chilled plow
George A. Davis & Co.	San Francisco	Plow for all purposes
Seymour, Sabin & Co.	Oakland	Imported stubble plow
Seymour, Sabin & Co.	Oakland	Imported steel plow
Seymour, Sabin & Co.	Oakland	Imported plow for all purposes
Dr. C. Grattan	Stockton	Grattan double gang plow
Baker & Hamilton	Sacramento	Cast iron plow
Baker & Hamilton	Sacramento	One-horse plow
Baker & Hamilton	Sacramento	Chilled plow

CLASS VII.

Exhibitor.	Residence.	Articles.
E. A. Scott & Co.	Sacramento	Wrought iron header wagon
E. A. Scott & Co.	Sacramento	Wrought iron header wagon
E. A. Scott & Co.	Sacramento	Wrought iron farm wagon
E. A. Scott & Co.	Sacramento	Wrought iron freight wagon
Geo. A. Davis & Co.	San Francisco	Four-horse California stake-rack iron skein wagon.
Geo. A. Davis & Co.	San Francisco	Two-horse double-box thimble skein farm wagon.
Geo. A. Davis & Co.	San Francisco	Two-horse farm wagon
Geo. A. Davis & Co.	San Francisco	Two-seat market farm wagon (spring)
C. Nelson & Bro.	Sacramento	Phaeton
C. Nelson & Bro.	Sacramento	Top buggy
C. Nelson & Bro.	Sacramento	Open buggy
C. Nelson & Bro.	Sacramento	Grocery wagon
F. P. Lowell	Sacramento	Top buggy
F. P. Lowell	Sacramento	Open buggy
F. P. Lowell	Sacramento	Two-seat open wagon
F. P. Lowell	Sacramento	Farm wagon for all purposes
F. P. Lowell	Sacramento	Business wagon
Joseph Hill	Sacramento	Family carriage
Joseph Hill	Sacramento	Top buggy
Joseph Hill	Sacramento	Open buggy
Joseph Hill	Sacramento	Two-seat open wagon

SECOND DEPARTMENT—*Continued.*

Exhibitor.	Residence.	Articles.
Joseph Hill	Sacramento	Trotting wagon
Joseph Hill	Sacramento	Farm wagon
Joseph Hill	Sacramento	Spring market wagon
Joseph Hill	Sacramento	Breaking cart
Joseph Hill	Sacramento	Ladies' phaeton
Joseph Hill	Sacramento	Business wagon
Joseph Hill	Sacramento	Display of wheels, hubs, and carriage material.
Baker & Hamilton	Sacramento	Farm wagon
Benicia Agricultural Works	Benicia	Family carriage
Benicia Agricultural Works	Benicia	Top buggy
Benicia Agricultural Works	Benicia	Open buggy
Benicia Agricultural Works	Benicia	Two-seat open wagon
Benicia Agricultural Works	Benicia	Farm wagon for general purposes, wood or iron.
Benicia Agricultural Works	Benicia	Breaking cart
Benicia Agricultural Works	Benicia	Business wagon
Holman, Stanton & Co.	Sacramento	Breaking cart
Holman, Stanton & Co.	Sacramento	Cart for all purposes
Palm Bros.	Sacramento	Spring market wagon
Palm Bros.	Sacramento	Spring market wagon
Palm Bros.	Sacramento	Spring farm wagon
D. R. McLennan	Napa	California gig, two wheels
A. Ingram & Co.	Sacramento	Three open buggies
A. Meister	Sacramento	Top buggy
A. Meister	Sacramento	Ladies' phaeton
A. Meister	Sacramento	Open buggies
A. Meister	Sacramento	Light business wagon
Palm Bros.	Sacramento	Three open buggies
Palm Bros.	Sacramento	One breaking cart
Palm Bros.	Sacramento	One Eureka gig
M. J. McCue	San Francisco	Family carriage
M. J. McCue	San Francisco	Top buggy
M. J. McCue	San Francisco	Open buggy
M. J. McCue	San Francisco	Open rockaway, two seats
M. J. McCue	San Francisco	Pole cart, breaking
M. J. McCue	San Francisco	Shaft cart, breaking
M. J. McCue	San Francisco	Business wagon

MISCELLANEOUS.

Exhibitor.	Residence.	Articles.
John A. Roebling & Sons	San Francisco	Buckthorn fence
D. Dempsey	San Francisco	Ely Meeker sun drier
P. K. Stockton	St. Helena	P. K. Stockton's vineyard gang plow and cultivator.
H. E. Fairman	Sacramento	Post driver and sharpener
Holman, Stanton & Co.	Sacramento	Glidden barb wire fence
D. A. Falkner	Sacramento	Punching press
D. A. Falkner	Sacramento	Wheel jack
Huntington, Hopkins & Co.	Sacramento	Black giant, shears, punch, and tire upsetter combined.
Baker & Hamilton	Sacramento	Portable forge
Baker & Hamilton	Sacramento	Garden barrow
Baker & Hamilton	Sacramento	Derrick fork
Baker & Hamilton	Sacramento	Barley fork
Baker & Hamilton	Sacramento	Hose reel
Baker & Hamilton	Sacramento	Hand cradle
Baker & Hamilton	Sacramento	Scythe and snath
Baker & Hamilton	Sacramento	Pitchfork
Baker & Hamilton	Sacramento	Grass-hook
Baker & Hamilton	Sacramento	Garden seeder, with cultivator attachment
Benicia Agricultural Works	Benicia	Weed cutter

Second Department—Continued.

Exhibitor.	Residence.	Articles.
Benicia Agricultural Works	Benicia	Vineyard cultivator
Benicia Agricultural Works	Benicia	Store truck
Benicia Agricultural Works	Benicia	Vineyard harrow
Benicia Agricultural Works	Benicia	Road scraper
J. A. Patty	Shasta	Common-sense sickle grinder
E. Hickman	Red Bluff	Improvement in headers

THIRD DEPARTMENT.

CLASS I—TEXTILE FABRICS.

Exhibitor.	Residence.	Articles.
Weinstock & Lubin	Sacramento	Exhibit of men's hats and caps
Weinstock & Lubin	Sacramento	Ten yards cloth of flax cotton
Weinstock & Lubin	Sacramento	Cotton shirting
Weinstock & Lubin	Sacramento	Ten yards linen
Weinstock & Lubin	Sacramento	Ten yards linen diaper
Weinstock & Lubin	Sacramento	Oilcloth table cover
Weinstock & Lubin	Sacramento	Gent's shirts
Weinstock & Lubin	Sacramento	Shoulder braces
Weinstock & Lubin	Sacramento	Neckties and bows
Weinstock & Lubin	Sacramento	Display of drygoods
Weinstock & Lubin	Sacramento	Display of corsets
Weinstock & Lubin	Sacramento	Stocking yarn
Weinstock & Lubin	Sacramento	Display of fancy goods
Weinstock & Lubin	Sacramento	Display of boys' clothing, California make
Weinstock & Lubin	Sacramento	Display of children's clothing, California make.
S. Lipman & Co.	Sacramento	Display of drygoods
D. H. Quinn	Sacramento	Display of men's hats
D. H. Quinn	Sacramento	Display of boys' hats
Fred. Mason	Sacramento	Display of gent's shirts
Fred. Mason	Sacramento	Display of bows and ties
R. Dale & Co.	Sacramento	Exhibit of silk goods by one factory
R. Dale & Co.	Sacramento	Exhibit of stocking yarn
Capital Woolen Mills	Sacramento	Exhibit of woolen goods by one factory
Capital Woolen Mills	Sacramento	Pieces of cotton sheeting
Capital Woolen Mills	Sacramento	Ten yards kersey
Capital Woolen Mills	Sacramento	Stocking yarn
Capital Woolen Mills	Sacramento	Exhibit of men's clothing
Capital Woolen Mills	Sacramento	Exhibit of boys' clothing
L. C. Moore	Truckee	Llama and northern Oregon wolfskins (combined) buggy robe.
Miss H. M. Smith	Sacramento	One knitted shawl
Ben. Cohen	Sacramento	Two Turkish rugs
Ben. Cohen	Sacramento	One piece all-wool three-ply carpet
Ben. Cohen	Sacramento	One piece all-wool hand-loom carpet

THIRD DEPARTMENT—Continued.

CLASS II—NEEDLE, SHELL, AND WAX WORK.

Exhibitor.	Residence.	Articles.
Mary E. Aiken	Sacramento	One piece embroidered children's clothes
Mary E. Aiken	Sacramento	Display of bead work
Mary E. Aiken	Sacramento	Set of darned netting sheet and pillow shams
Mrs. E. Sanborn	Sacramento	One applique tidy
Mrs. E. Sanborn	Sacramento	Fifteen pairs crochet edgings
Mrs. E. Sanborn	Sacramento	Display ladies' underwear
Miss Abbie Sawtelle	Sacramento	One silk quilt
Miss Abbie Sawtelle	Sacramento	Two sets darned net toilet sets
Miss Abbie Sawtelle	Sacramento	One bead embroidered toilet set
Miss Abbie Sawtelle	Sacramento	One worsted sofa cushion
Miss Abbie Sawtelle	Sacramento	One lace handkerchief
Miss Abbie Sawtelle	Sacramento	Six lace curtains
Miss Abbie Sawtelle	Sacramento	Two lace tidies
Miss Abbie Sawtelle	Sacramento	One crochet shawl
Mrs. S. Conrad	Sacramento	One crochet bedspread
Mrs. S. Conrad	Sacramento	One crochet shawl
Mrs. S. Conrad	Sacramento	One embroidered sofa cushion
Mrs. S. Conrad	Sacramento	One sofa cushion in applique
Mrs. S. Conrad	Sacramento	One hearth rug
Mrs. S. Conrad	Sacramento	One tidy and wall panel in bead work
Mrs. S. Conrad	Sacramento	One seed picture
Mrs. S. Conrad	Sacramento	One daisy mat
Mrs. S. Conrad	Sacramento	One fancy basket
Mrs. S. Conrad	Sacramento	Specimen fine hand knitting
Mrs. S. Conrad	Sacramento	Specimen needlework in hand sewing
Mrs. S. Conrad	Sacramento	Model of different stitches in hand sewing
Mrs. S. Conrad	Sacramento	Crystallized basket
Mrs. S. Conrad	Sacramento	Crochet tidy
Mrs. F. F. Thompson	Sacramento	One worsted wreath
Mrs. F. F. Thompson	Sacramento	One hair wreath
Mrs. F. F. Thompson	Sacramento	Two straw frames
Mrs. F. F. Thompson	Sacramento	One baby's afghan
Charles E. Passmore	Santa Cruz	Display of sea mosses and shell flowers
Miss Ella C. Tubbs	Sacramento	One tatting tidy
Miss Ella C. Tubbs	Sacramento	One pair bobinet pillow shams and S. sham
Miss Ella C. Tubbs	Sacramento	Four bobinet tidies
Miss Ella C. Tubbs	Sacramento	One bobinet toilet set
Miss Ella C. Tubbs	Sacramento	One pair bobinet shams and spread
Miss Ella C. Tubbs	Sacramento	One lamp mat
Miss Ella C. Tubbs	Sacramento	Three canvas tidies
Miss Ella C. Tubbs	Sacramento	One canvas toilet set
Miss Ella C. Tubbs	Sacramento	Two honeycomb tidies
Miss Ella C. Tubbs	Sacramento	One fancy pincushion
Miss Ella C. Tubbs	Sacramento	One beaded sofa cushion
Miss Ella C. Tubbs	Sacramento	Two pairs hairpin holders
Miss Ella C. Tubbs	Sacramento	One lambrequin
Dora Woodburn	Sacramento	One table scarf, Kensington embroidery
Dora Woodburn	Sacramento	One chair scarf, Kensington embroidery
Dora Woodburn	Sacramento	One embroidered banner
Dora Woodburn	Sacramento	Three embroidered handkerchiefs
Dora Woodburn	Sacramento	One ottoman embroidered in tillosel silk
Dora Woodburn	Sacramento	One window lambrequin
Dora Woodburn	Sacramento	Sample—piece unfinished embroidery
Dora Woodburn	Sacramento	Two yards silk embroidery
Dora Woodburn	Sacramento	One sofa cushion chenille embroidery
Mrs. Jessie Dean	Sacramento	One sofa pillow
Mrs. Jessie Dean	Sacramento	One *ring tidy*
Miss Josephine Johnson	Sacramento	One creton table cover
Miss Josephine Johnson	Sacramento	One embroidered sacque
Miss Josephine Johnson	Sacramento	One embroidered handkerchief box
Miss Josephine Johnson	Sacramento	One pair darn net pillow shams
Miss Josephine Johnson	Sacramento	One darn net toilet set
Miss Josephine Johnson	Sacramento	Two toilet boxes
Miss Josephine Johnson	Sacramento	One embroidered jewel case
Miss Josephine Johnson	Sacramento	One fancy chair

THIRD DEPARTMENT—Continued.

Exhibitor.	Residence.	Articles.
Miss M. E. McCormick	San Francisco	Two fans, satin, painted in oil
Miss M. E. McCormick	San Francisco	Two collars, painted in oil
Miss M. E. McCormick	San Francisco	Two pillow shams, painted in oil
Miss Alice Nottingham	Sacramento	One silk quilt
Miss Ella C. Tubbs	Sacramento	One handkerchief box
Miss Ella C. Tubbs	Sacramento	One pair toilet bottles
Miss Ella C. Tubbs	Sacramento	Three bobinet tidies
Weinstock & Lubin	Sacramento	Embroidered table cover
Weinstock & Lubin	Sacramento	Crochet bedspread
Weinstock & Lubin	Sacramento	Lambrequin
Weinstock & Lubin	Sacramento	Display of millinery
Weinstock & Lubin	Sacramento	Velvet bonnet
Weinstock & Lubin	Sacramento	Velvet hat
Weinstock & Lubin	Sacramento	Silk bonnet
Weinstock & Lubin	Sacramento	Display of feathers
Weinstock & Lubin	Sacramento	Variety artificial flowers
Mrs. C. R. Murphy	Brighton	One lace apron
Weinstock & Lubin	Sacramento	Lady's dress
Weinstock & Lubin	Sacramento	Knitted shawl
Weinstock & Lubin	Sacramento	Crochet shawl
Weinstock & Lubin	Sacramento	Display lovelace embroidery
Weinstock & Lubin	Sacramento	Variety linen embroidery
Weinstock & Lubin	Sacramento	Pair bootees, worsted
Mrs. Jane E. Sommers	Sacramento	One crochet shawl
Miss Josephine Johnson	Sacramento	One pair embroidered suspenders
Miss Josephine Johnson	Sacramento	Six embroidered silk handkerchiefs
Mrs. William Tibbits	Sacramento	Three pairs lace pillow shams
Mrs. William Tibbits	Sacramento	One pair lace bed shams
Misses Brothers	Sacramento	Display of millinery
Misses Brothers	Sacramento	Velvet bonnet
Misses Brothers	Sacramento	Velvet hat
Misses Brothers	Sacramento	Silk bonnet
Misses Brothers	Sacramento	Display of feathers
Misses Brothers	Sacramento	Variety artificial flowers
Mrs. M. Michener	Sacramento	Glass case of bead work
Miss Phil. Edwards	San Francisco	One piece embroidery
Mrs. E. R. Hamilton	Sacramento	One embroidered fire screen
Mrs. W. T. Crowell	Sacramento	One child's afghan
Mrs. W. T. Crowell	Sacramento	One pair mats
Mrs. W. T. Crowell	Sacramento	One worsted tidy
Mrs. W. T. Crowell	Sacramento	One infant's sack
Mrs. W. T. Crowell	Sacramento	One infant's bonnet
Mrs. W. T. Crowell	Sacramento	Two shirts
Mrs. W. T. Crowell	Sacramento	One child's crochet suit
Mrs. W. T. Crowell	Sacramento	One pair pillow cases
Mrs. W. T. Crowell	Sacramento	Two crochet tidies
Mrs. W. T. Crowell	Sacramento	Thirty yards crochet lace
Miss Julia Goodell	Sacramento	One sofa pillow
Mrs. N. D. Goodell	Sacramento	One afghan
Mrs. N. D. Goodell	Sacramento	One tidy
Mrs. J. L. McCord	Sacramento	Two silk quilts
Mrs. J. L. McCord	Sacramento	One crochet spread
Mrs. J. L. McCord	Sacramento	One felt spread
Mrs. J. L. McCord	Sacramento	One needlework table cover
Miss Ida Allen	Nevada City	Two ice wool shawls
Mrs. Adna Phelps	Sacramento	One hearth rug
James C. Glover	Sacramento	Display basket, shell and sea moss
M. E. Davis	Sacramento	One toilet set
Miss Nettie Hamilton	Sacramento	One embroidered dress
Miss Phebe C. Brown	Sacramento	One chair seat, Kensington
Miss Phebe C. Brown	Sacramento	One tidy, Kensington
Miss Belle Felter	Sacramento	Bead work
Miss Belle Felter	Sacramento	Table cover, Kensington
Miss Belle Felter	Sacramento	Two table scarfs
Miss Belle Felter	Sacramento	Three pieces chenille embroidery
Miss Belle Felter	Sacramento	Fire screen
Miss Belle Felter	Sacramento	Embroidered fire screen

THIRD DEPARTMENT—Continued.

Exhibitor.	Residence.	Articles.
Miss Belle Felter	Sacramento	Two toilet sets
Miss Belle Felter	Sacramento	Sofa cushion
Miss Belle Felter	Sacramento	Arraseno work
Miss Belle Felter	Sacramento	Lambrequin, Turkish embroidery
Miss Belle Felter	Sacramento	Outline embroidery
Miss Belle Felter	Sacramento	Two lambrequins
Miss Belle Felter	Sacramento	Display ornamental needlework
Mrs. J. E. Turner	Sacramento	One paper quilt
Mrs. John Q. Brown	Sacramento	Embroidered rocking chair
Mrs. B. F. Tade	Sacramento	One worked quilt, embossed
Mrs. W. L. Scott	Red Bluff	One cross-cut and buzz-saw bed quilt
Mrs. James Brown	Battle Mountain	One crochet bedspread
Miss Bessie Lambie	Denverton	One crochet tidy
Mrs. Joe Hunter	Yolo County	One knit bedspread
Mrs. Joe Hunter	Yolo County	One knit rug
Miss Kittie Van Voorhies	Sacramento	One crochet shawl
Miss Kittie Van Voorhies	Sacramento	One embossed wall panel
Miss Kittie Van Voorhies	Sacramento	Outline embroidery
Miss S. G. Beaumont	Sacramento	Four knit infants' shirts
Miss S. G. Beaumont	Sacramento	Seven pairs infants' stockings
Mrs. Wm. Kirk	Oakland	Silk quilt
Mrs. Caroline Zeh	Sacramento	One bedspread
Mrs. Caroline Zeh	Sacramento	One bed sham
Mrs. J. D. Hill	Elk Grove	Two crochet shawls
W. F. Peterson	Sacramento	One patchwork quilt
Mrs. R. W. Lewis	Sacramento	One table scarf, Kensington
Mrs. R. W. Lewis	Sacramento	One tidy, Kensington
Mrs. R. W. Lewis	Sacramento	One silk lambrequin, embossed
Mrs. R. W. Lewis	Sacramento	One cushion
Mrs. Warren F. Drew	Sacramento	One bedspread
Mrs. Warren F. Drew	Sacramento	One pair pillow shams
Mrs. Warren F. Drew	Sacramento	One toilet set
Miss Marie L. Ripley	Sacramento	One white crochet shawl
Mrs. Wm. M. Lyon	Sacramento	One ottoman cover
Mrs. Wm. M. Lyon	Sacramento	One table cover
Mrs. Wm. M. Lyon	Sacramento	Chair seat strips, Kensington
Mrs. Wm. M. Lyon	Sacramento	One piece applique
Mrs. Wm. M. Lyon	Sacramento	One fire screen
Mrs. Wm. M. Lyon	Sacramento	One table cover
Mrs. Wm. M. Lyon	Sacramento	One wall panel
Mrs. Wm. M. Lyon	Sacramento	Three pieces lovelace embroidery
Mrs. Wm. M. Lyon	Sacramento	Three pieces braid work
Mrs. Wm. M. Lyon	Sacramento	Twenty pieces outline embroidery
Mrs. Wm. M. Lyon	Sacramento	One arrasenon
Mrs. Wm. M. Lyon	Sacramento	One lambrequin
Mrs. Wm. M. Lyon	Sacramento	One white toilet set
Mrs. Wm. M. Lyon	Sacramento	One porcelain painting
Mrs. Wm. M. Lyon	Sacramento	Display ornamental needlework
Mrs. Wm. M. Lyon	Sacramento	One embroidered palette, Kensington
Miss H. M. Smith	Sacramento	Exhibit fine needlework
Miss Anna E. Artz	Brighton	Specimen needlework
Ben. Cohen	Sacramento	Lace curtains
Ben. Cohen	Sacramento	Curtain loops
Ben. Cohen	Sacramento	Gimp bands
Ben. Cohen	Sacramento	Curtain hooks
Ben. Cohen	Sacramento	Cornice poles
Ben. Cohen	Sacramento	Stair rods
Miss Eug. R. J. Excoffier	Sacramento	Display of tatting and crochet
Miss Eug. R. J. Excoffier	Sacramento	Display of fancy apron braid work
Miss Eug. R. J. Excoffier	Sacramento	Three pairs stockings, fancy knitting
Miss Eug. R. J. Excoffier	Sacramento	Two pillow shams, darned
Miss Eug. R. J. Excoffier	Sacramento	One cushion, frame work
Miss Eug. R. J. Excoffier	Sacramento	One mat, frame work
Miss Eug. R. J. Excoffier	Sacramento	One Mexican embroidered chemise yoke
Miss Eug. R. J. Excoffier	Sacramento	One crochet chemise yoke
Miss Eug. R. J. Excoffier	Sacramento	One tatted tie
Miss Eug. R. J. Excoffier	Sacramento	One tatted handkerchief

THIRD DEPARTMENT—Continued.

Exhibitor.	Residence.	Articles.
Miss Carrie Phillips	Sacramento	Three chair strips, Kensington
Mrs. F. A. Ebel	Sacramento	Table cone work
Mrs. F. A. Ebel	Sacramento	Table rustic work
Miss Carrie Yoerk	Sacramento	One sofa cushion
Miss Carrie Yoerk	Sacramento	Two lambrequins
Miss Carrie Yoerk	Sacramento	One toilet set
Miss Carrie Yoerk	Sacramento	One table top, embroidered
Miss Carrie Yoerk	Sacramento	One painted panel
Miss Carrie Yoerk	Sacramento	One painted plate
Miss Carrie Yoerk	Sacramento	Two boxes
Miss Carrie Yoerk	Sacramento	Two bottles

JUVENILE DEPARTMENT.

Exhibitor.	Residence.	Articles.
Miss Nellie Billiou	Sacramento	Two cushions
Miss Nellie Billiou	Sacramento	One shell tidy
Miss Louisa Conrad	Sacramento	Patchwork quilt
Miss Louisa Conrad	Sacramento	Four pieces hand sewing
Miss Louisa Conrad	Sacramento	Embroidered picture
Miss Louisa Conrad	Sacramento	Crochet cap and collar
Miss Louisa Conrad	Sacramento	Hand-made shirt
Miss Bertha Conrad	Sacramento	One pair knit cotton stockings
Miss Bertha Conrad	Sacramento	One pair knit woolen stockings
Cornelius Conrad	Sacramento	Two drawings
Miss Annie Conrad	Sacramento	Worsted embroidery
Miss Lillie B. Cutter	Sacramento	Twelve pieces outline embroidery
Miss Lillie B. Cutter	Sacramento	One ottoman cover, Kensington
Miss Lillie B. Cutter	Sacramento	One tidy, Kensington
Miss Phebe C. Brown	Sacramento	One chair scarf
Miss Alida B. Lewis	Sacramento	Moss work

CLASS III—LIBERAL ARTS—PRINTING, LITHOGRAPHING, ETC.

Exhibitor.	Residence.	Articles.
F. Foster	Sacramento	Display of fine bookbinding
F. Foster	Sacramento	Display of plain bookbinding
F. Foster	Sacramento	Display of book ruling and binding
H. Lowery	Sacramento	Display of maps and charts
W. A. & C. S. Houghton	Sacramento	Display of stationery
W. A. & C. S. Houghton	Sacramento	Display of books and publishing
W. A. & C. S. Houghton	Sacramento	Specimen of book printing
W. H. Eckhardt	Sacramento	Specimen steel engraving
Day & Joy	Sacramento	Exhibit of book printing
Sacramento Business College	Sacramento	Six pieces business penmanship
Sacramento Business College	Sacramento	Six pieces penmanship and pen drawing combined.
Sacramento Business College	Sacramento	Three pieces pen drawing
Geo. Schmidt	Sacramento	Exhibit mechanical drawings of carriages, etc., in India ink and colors, and free hand drawing.

FOURTH DEPARTMENT.

CLASS I—MANUFACTURES OF LEATHER, PAPER, AND RUBBER.

Exhibitor.	Residence.	Articles.
F. Foster	Sacramento	Display of bound account books
Weinstock & Lubin	Sacramento	Display of leather gloves and mittens
Weinstock & Lubin	Sacramento	Display of traveling trunks, valises, and bags
Weinstock & Lubin	Sacramento	Carpet-sacks
Weinstock & Lubin	Sacramento	Dress boots
Weinstock & Lubin	Sacramento	Heavy boots
Weinstock & Lubin	Sacramento	Gents' dress shoes
Weinstock & Lubin	Sacramento	Congress gaiters
Weinstock & Lubin	Sacramento	Ladies' gaiters
Weinstock & Lubin	Sacramento	Ladies' slippers
Weinstock & Lubin	Sacramento	Display of men's and boys' boots and shoes
Weinstock & Lubin	Sacramento	Display of ladies' and misses' boots and shoes
Asher Longshore	Sacramento	Sole leather trunk
Asher Longshore	Sacramento	Sole leather valise
Asher Longshore	Sacramento	Ladies' Saratoga trunks
Asher Longshore	Sacramento	Russian leather bags
Asher Longshore	Sacramento	Ladies' duck Saratoga trunk
Asher Longshore	Sacramento	Black leather bag
Huntington, Hopkins & Co.	Sacramento	Display of rubber hose and belting
Huntington, Hopkins & Co.	Sacramento	Display of leather belting
Tubbs & Co.	San Francisco	Display of cordage
C. H. Krebs & Co.	Sacramento	Display of paper hangings and borders
F. Foster	Sacramento	Display of marble paper, home manufacture
Whittier, Fuller & Co.	Sacramento	Display of paper hangings and borders
Ben. Cohen	Sacramento	Display of carpets and rugs
A. A. Van Voorhies	Sacramento	Double buggy harness
A. A. Van Voorhies	Sacramento	Single buggy harness
A. A. Van Voorhies	Sacramento	Display of Mexican saddles
A. A. Van Voorhies	Sacramento	Display of leather saddles
A. A. Van Voorhies	Sacramento	Display of saddles and bridles
A. A. Van Voorhies	Sacramento	Display of saddle-trees
A. A. Van Voorhies	Sacramento	Display shoe lasts, pegs, and lasting machine
Locke & Lavenson	Sacramento	Display of carpets
Locke & Lavenson	Sacramento	Display of rugs
Mrs. A. E. Dutton	Sacramento	One rag carpet

CLASS II—WORKED METALS.

Exhibitor.	Residence.	Articles.
Weinstock & Lubin	Sacramento	Display of silverware
Scott & Muir	Sacramento	Display of gas chandeliers and burners
Scott & Muir	Sacramento	Display of lamps
L. L. Lewis & Co.	Sacramento	Display of tinware
L. L. Lewis & Co.	Sacramento	Display of kitchen utensils of tin
Geo. T. Bush	Sacramento	Display of brass work
Geo. T. Bush	Sacramento	Display of plummer's goods and wares
S. Tristam	Concord, Contra Costa	Display of wire cloth
Huntington, Hopkins & Co.	Sacramento	Modern building hardware
Huntington, Hopkins & Co.	Sacramento	Display of general hardware
Huntington, Hopkins & Co.	Sacramento	Display of iron and steel
Huntington, Hopkins & Co.	Sacramento	Display of barb-wire fencing
Huntington, Hopking & Co.	Sacramento	Display of mechanics' tools
Huntington, Hopkins & Co.	Sacramento	Display of horseshoes, machine made
Huntington, Hopkins & Co.	Sacramento	Display of table cutlery
Huntington, Hopkins & Co.	Sacramento	Display of pocket cutlery

Fourth Department—Continued.

Exhibitor.	Residence.	Articles.
Huntington, Hopkins & Co.	Sacramento	Display of circular saws
Huntington, Hopkins & Co.	Sacramento	Display of files
Huntington, Hopkins & Co.	Sacramento	Display of pruning shears
Huntington, Hopkins & Co.	Sacramento	Display of pruning knives
Huntington, Hopkins & Co.	Sacramento	Display of anti-friction metal
Huntington, Hopkins & Co.	Sacramento	Exhibition of shot
Huntington, Hopkins & Co.	Sacramento	Brass work
Geo. E. Duden	Lake House	One dozen pairs pruning shears
Geo. T. Bush	Sacramento	Display of copper work
A. A. Van Voorhies	Sacramento	Display of saddlers' hardware
T. A. E. Brady	San Francisco	Patent tule horseshoe
Trueman S. Clark & Son	San Francisco	Display of wire goods
B. F. Wellington	San Francisco	Pruning shears

CLASS III—STOVES, CASTINGS, ETC.

Exhibitor.	Residence.	Articles.
Aitken & Fish	Sacramento	Parlor grate
L. L. Lewis	Sacramento	Cooking stove for wood
L. L. Lewis	Sacramento	Cooking stove for coal
L. L. Lewis	Sacramento	Warming furnace
L. L. Lewis	Sacramento	Parlor stove
L. L. Lewis	Sacramento	Cooking range
L. L. Lewis	Sacramento	Display of hollow iron ware
L. L. Lewis	Sacramento	Ornamental fruit and flower stand
L. L. Lewis	Sacramento	Portable range
L. L. Lewis	Sacramento	Laundry stove

CLASS IV—MUSICAL INSTRUMENTS.

Exhibitor.	Residence.	Articles.
L. K. Hammer	Sacramento	Three organs
L. K. Hammer	Sacramento	One case musical instruments
F. R. Girard	San Francisco	Four pianos
F. R. Girard	San Francisco	Four organs
A. M. Goodnough	San Francisco	One Bradbury upright piano
A. M. Goodnough	San Francisco	One Geo. Steck square piano
A. M. Goodnough	San Francisco	Four samples Smith's American organs
M. Pearson	Sacramento	Display of organs

CLASS V—FURNITURE.

Exhibitor.	Residence.	Articles.
W. H. Mead	Sacramento	Two ornamental center tables
P. Liesenfeld	San Francisco	One billiard table
J. S. Bennett	San Francisco	Chamber suite
J. S. Bennett	San Francisco	One bookcase
J. S. Bennett	San Francisco	One walnut dressing bureau
J. S. Bennett	San Francisco	One mahogany sofa
J. S. Bennett	San Francisco	One lounge
J. S. Bennett	San Francisco	One walnut extension table
J. S. Bennett	San Francisco	One walnut frame leather office chair
J. S. Bennett	San Francisco	One set (six) parlor chairs, mahogany
J. S. Bennett	San Francisco	One ebony inlaid center table
J. S. Bennett	San Francisco	One pair ebony side tables

Fourth Department—Continued.

Exhibitor.	Residence.	Articles.
J. S. Bennett	San Francisco	One walnut frame set of parlor furniture
J. S. Bennett	San Francisco	Display of furniture
J. S. Bennett	San Francisco	Display of mattresses
J. S. Bennett	San Francisco	One walnut bookcase
J. S. Bennett	San Francisco	One walnut wardrobe
J. S. Bennett	San Francisco	One walnut frame sick couch
J. S. Bennett	San Francisco	One spring bed
J. S. Bennett	San Francisco	One set ash and laurel bedroom furniture
J. S. Bennett	San Francisco	Display of upholstery
J. S. Bennett	San Francisco	One walnut office desk
J. S. Bennett	San Francisco	One walnut bedstead
J. S. Bennett	San Francisco	One mahogany chamber set
J. S. Bennett	San Francisco	One walnut hall stand
J. S. Bennett	San Francisco	One walnut sideboard
J. S. Bennett	San Francisco	One ebony frame parlor set
J. S. Bennett	San Francisco	One walnut frame patent rocker
J. S. Bennett	San Francisco	One walnut frame window chair
J. S. Bennett	San Francisco	One walnut frame corner chair
J. S. Bennett	San Francisco	One pair solid frame fancy chairs
Truman S. Clark	San Francisco	Five woven wire mattresses
Trumau S. Clark	San Francisco	One section hair mattress
Truman S. Clark	San Francisco	One crib mattress
Truman S. Clark	San Francisco	One triple woven wire mattress
Truman S. Clark	San Francisco	One bolster
Truman S. Clark	San Francisco	Two pillows

CLASS VI—VOODEN WARE.

Exhibitor.	Residence.	Articles.
W. Taylor	Sacramento	Display of scroll sawing
Billingsley & Co.	Sacramento	Display of cedar wood
Billingsley & Co.	Sacramento	Display of pine wood
Billingsley & Co.	Sacramento	Display of oak wood
Billingsley & Co.	Sacramento	Display of willow ware
Billingsley & Co.	Sacramento	Display of split-wood baskets
Billingsley & Co.	Sacramento	Display of osier willow
Billingsley & Co.	Sacramento	Display of wooden ware
Billingsley & Co.	Sacramento	Display of broom corn, brooms, and brushes
Billingsley & Co.	Sacramento	Display of hair brushes
Billingsley & Co.	Sacramento	Assortment of cooper's ware
Billingsley & Co.	Sacramento	Washing machine
Billingsley & Co.	Sacramento	Churn
Billingsley & Co.	Sacramento	Clothes-horse
Weinstock & Lubin	Sacramento	Churn
John D. Winters	Davisville	Golden Gate washing machine
Mrs. Mamie Davis	San Francisco	Scroll sawing, fancy clock case
R. W. Brehn	San Francisco	Display of turning-lathe work

CLASS VII—PHILOSOPHICAL, ETC.

Exhibitor.	Residence.	Articles.
A. S. McLean	San Francisco	One case trusses
Weinstock & Lubin	Sacramento	One thermometer
Weinstock & Lubin	Sacramento	Display of clocks
Weinstock & Lubin	Sacramento	Eight-day clock
Weinstock & Lubin	Sacramento	Achromatic telescope
C. N. West	San Francisco	Electro-medical belt
R. A. Fisk	Sacramento	Electro-magnetic apparatus

FOURTH DEPARTMENT—Continued.

Exhibitor.	Residence.	Articles.
R. A. Fisk	Sacramento	Electric machine
R. A. Fisk	Sacramento	Galvanic battery and apparatus
R. A. Fisk	Sacramento	Electro-telegraph
Henry Eckhardt	Sacramento	One sporting rifle
Henry Eckhardt	Sacramento	One breech-loading shotgun
Henry Eckhardt	Sacramento	One game bag
Henry Eckhardt	Sacramento	Display of firearms
Robert Reed	Oakland	Display of artificial limbs
J. P. Odbert	Sacramento	Combined alarm and door bell

CLASS VIII—CHEMICALS.

Exhibitor.	Residence.	Articles.
Newton Bros. & Co., per Lee Griffin, agent	San Francisco	Display of yeast powders, or New England baking powder.
Wm. T. Coleman & Co.	San Francisco	Display of Royal baking powder
Davis & Cooper	San Francisco	Davis' water-proof blacking
Davis & Cooper	San Francisco	Davis' harness oil
Davis & Cooper	San Francisco	Davis' boot polish
Bidwell & Cook	Sacramento	Gilt-edge baking powder
M. A. Reaves	San Francisco	Great electric hair tonic
Huntington, Hopkins & Co.	Sacramento	Display of blacking
Huntington, Hopkins & Co.	Sacramento	Display of stove polish

CLASS IX--STONEWARE, CONFECTIONERY, ETC.

Exhibitor.	Residence.	Articles.
Billingsley & Co.	Sacramento	Demijohns
John Carlan	Sacramento	Dressed stone
W. F. Peterson	Sacramento	Thirteen cases of fancy confectionery
W. F. Peterson	Sacramento	Fifty-one jars of candy
Henry Fisher	Sacramento	Sixty-four jars of confectionery
Henry Fisher	Sacramento	Ten cases of fancy confectionery
Henry Fisher	Sacramento	Two showcases of confectionery
Henry Fisher	Sacramento	One upright showcase of confectionery
Hobby & Ellsworth	Sacramento	Display of stoneware
Hobby & Ellsworth	Sacramento	Sample of drain tile
Hobby & Ellsworth	Sacramento	Terra cotta
Hobby & Ellsworth	Sacramento	Fire brick
Hobby & Ellsworth	Sacramento	Pottery, various kinds
Hobby & Ellsworth	Sacramento	Flooring tile

CLASS X—MINERALS, ETC.

Exhibitor.	Residence.	Articles.
H. P. Martin	Woodland	Display of artificial stone for cemetery purposes.

FOURTH DEPARTMENT—Continued.

CLASS XI—CALIFORNIA DRAWINGS, DESIGNS, MARBLE, AND GRANITE WORK.

Exhibitor.	Residence.	Articles.
I. L. Dias	Petaluma	Petaluma incubator
I. L. Dias	Petaluma	Artificial mother, or brooder
John Carlan	Sacramento	Six pieces of polished granite
John Carlan	Sacramento	Collection of polished California granite
Aitken & Fish	Sacramento	Collection of polished marble work
Aitken & Fish	Sacramento	Display of marbleized slate, mantel
James Seadler	Sacramento	One design of city residence
James Seadler	Sacramento	One design of farm house
Henry Wolgemuth	Sacramento	Two pieces of polished marble work
B. F. Wellington	San Francisco	Perfect hatcher, incubator

FIFTH DEPARTMENT.

CLASS I—SILK, COTTON, AND TOBACCO.

Exhibitor.	Residence.	Articles.
Seal Rock Tobacco Co.	San Francisco	Display of California manufactured tobacco.
R. Dale & Co.	Sacramento	Exhibition of the silk business, from the mulberry tree to the silk cocoon, including feeding of the worms, their eggs, etc.

CLASS II—FLOUR AND GRAIN.

Exhibitor.	Residence.	Articles.
A. D. Miller	Brighton	White wild oats, two bushels
C. McCreary & Co.	Sacramento	One hundred lbs. Sacramento Mill flour
C. McCreary & Co.	Sacramento	One hundred lbs. our best Eureka flour
C. McCreary & Co.	Sacramento	One hundred lbs. McCreary pat. rolled flour
John Bidwell	Chico	Two bushels Australian wheat
John Bidwell	Chico	Two bushels white Chili wheat
John Bidwell	Chico	Two bushels white club wheat
John Bidwell	Chico	Two bushels white proper wheat
John Bidwell	Chico	Two bushels Sonoma wheat
John Bidwell	Chico	Two bushels Odessa wheat
John Bidwell	Chico	Two bushels rye
John Bidwell	Chico	Two bushels oats
John Bidwell	Chico	Two bushels barley
John Bidwell	Chico	One hundred pounds flour
John Bidwell	Chico	Variety of wheat in head and ear
John Bidwell	Chico	Sample of alfalfa seed
John Bidwell	Chico	Sample of yellow corn
John Bidwell	Chico	Sample of white corn
John Bidwell	Chico	Sample of early corn

FIFTH DEPARTMENT—Continued.

CLASS III—VEGETABLES, ROOTS, ETC.

Exhibitor.	Residence.	Articles.
McGregor Bros.	Sacramento	One half bushel white potatoes
McGregor Bros.	Sacramento	Six sugar beets
McGregor Bros.	Sacramento	One peck of tomatoes
McGregor Bros.	Sacramento	Large pumpkin
McGregor Bros.	Sacramento	One half dozen sweet corn (green)
McGregor Bros.	Sacramento	Mountain watermelons (three sweet)
McGregor Bros.	Sacramento	Three watermelons
McGregor Bros.	Sacramento	Six cucumbers
Mrs. Thos. Hague	Sacramento	Six sugar beets
Mrs. Thos. Hague	Sacramento	Six long blood beets
Mrs. Thos. Hague	Sacramento	Six cucumbers
Robert Brown	Brighton	Pumpkin
F. A. Ebel	Sacramento	Three boxes tomatoes
J. Lyon	Placerville	Ten varieties of tomatoes
John Bidwell	Chico	One half bushel sweet potatoes
John Bidwell	Chico	Six sugar beets
John Bidwell	Chico	Six marrowfat squashes
John Bidwell	Chico	Six Hubbard squashes
John Bidwell	Chico	Six crooked-neck squashes
John Bidwell	Chico	One large pumpkin
John Bidwell	Chico	Three watermelons
John Bidwell	Chico	Three green F. C. muskmelons
John Bidwell	Chico	Three yellow-fleshed muskmelons
McGregor Bros.	Sacramento	One half bushel sweet potatoes
McGregor Bros.	Sacramento	Twelve parsnips
McGregor Bros.	Sacramento	Twelve carrots
McGregor Bros.	Sacramento	Six blood beets
McGregor Bros.	Sacramento	Six turnip beets
McGregor Bros.	Sacramento	Six drumhead cabbage
McGregor Bros.	Sacramento	Six red Dutch cabbage
McGregor Bros.	Sacramento	Cabbages, six of other varieties
McGregor Bros.	Sacramento	Three heads cauliflower
McGregor Bros.	Sacramento	Three heads broccoli
McGregor Bros.	Sacramento	Six heads lettuce
McGregor Bros.	Sacramento	One half peck onions
McGregor Bros.	Sacramento	One half peck red onions
McGregor Bros.	Sacramento	One half peck pickling peppers
McGregor Bros.	Sacramento	Twelve roots salsify
McGregor Bros.	Sacramento	Six stocks celery
McGregor Bros.	Sacramento	One half peck Lima beans in pod
McGregor Bros.	Sacramento	One half peck kidney bush beans in pod
McGregor Bros.	Sacramento	Three purple egg plants
McGregor Bros.	Sacramento	Best table of vegetables
McGregor Bros.	Sacramento	One half dozen Yokohama squash
McGregor Bros.	Sacramento	Watercress
McGregor Bros.	Sacramento	One dozen radishes
McGregor Bros.	Sacramento	One half bushel red potatoes
McGregor Bros.	Sacramento	One half bushel potatoes, any variety

CLASS IV—FLOWERS.

Exhibitor.	Residence.	Articles.
Frank Kunz	Sacramento	Collection flowering plants in bloom
Frank Kunz	Sacramento	Collection of ornamental foliage plants
Frank Kunz	Sacramento	Collection of roses in bloom
Frank Kunz	Sacramento	Collection of fuchsias in bloom
Frank Kunz	Sacramento	Display of cut flowers
Frank Kunz	Sacramento	Display of bouquets
Frank Kunz	Sacramento	Collection of greenhouse plants
Frank Kunz	Sacramento	Hanging baskets

FIFTH DEPARTMENT—Continued.

Exhibitor.	Residence.	Articles.
F. A. Ebel	Sacramento	Ornamental foliage plants
F. A. Ebel	Sacramento	New and rare plants
F. A. Ebel	Sacramento	Collection of greenhouse, conservatory, and window culture.
F. A. Ebel	Sacramento	Display of bouquets
Thos. O'Brien	Sacramento	Display of cut flowers

CLASS V—CHEESE.

Exhibitor.	Residence.	Articles.
I. R. Jewell	Petaluma	Cheese one year old and over
I. R. Jewell	Petaluma	Cheese under one year
I. R. Jewell	Petaluma	Display of cheese

CLASS VI—BUTTER, BREAD, ETC.

Exhibitor.	Residence.	Articles.
Mrs. E. F. Aiken	Sacramento	Display of butter, ten pounds
Mrs. E. F. Aiken	Sacramento	Domestic brown bread
W. F. Peterson	Sacramento	Four loaves baker's bread
Henry Fisher	Sacramento	One tin of soda biscuit
Henry Fisher	Sacramento	One tin of butter crackers
Henry Fisher	Sacramento	One tin of sweet crackers
Henry Fisher	Sacramento	One tin of Boston crackers
Henry Fisher	Sacramento	One tin of biscuit
Mrs. George W. Lorenz	Sacramento	Domestic brown bread
Mrs. George W. Lorenz	Sacramento	Plate of biscuit
B. W. Wilder	Franklin Township	One gallon cane syrup from Minnesota amber cane.
Mrs. H. Cronkite	Brighton	One jar firkin butter, twenty-five pounds
Mrs. H. Cronkite	Brighton	One roll butter, ten pounds
Mrs. S. Conrad	Sacramento	Domestic rye bread
Mrs. S. Conrad	Sacramento	Domestic brown bread
Mrs. S. Conrad	Sacramento	Domestic wheat bread
Mrs. S. Conrad	Sacramento	Domestic corn bread
Mrs. S. Conrad	Sacramento	Soda biscuit
Mrs. S. Conrad	Sacramento	Display of domestic bread
Mrs. W. H. Wright	Sacramento	Domestic brown bread
Mrs. W. H. Wright	Sacramento	Graham bread
Mrs. W. H. Wright	Sacramento	Graham biscuit
Mrs. W. H. Wright	Sacramento	Domestic corn bread
Mrs. W. H. Wright	Sacramento	Domestic wheat bread
Mrs. W. H. Wright	Sacramento	Biscuit
Mrs. W. H. Wright	Sacramento	Display of domestic bread
James Askew	El Dorado	Twelve pounds roll butter
James Askew	El Dorado	Twenty-five pounds firkin butter
Alida B. Lewis	Sacramento	Domestic white loaf bread
Jennie L. Powers	Sacramento	Domestic white bread
Jennie L. Powers	Sacramento	Domestic brown rye bread
Jennie L. Powers	Sacramento	Domestic brown bread, Graham and Boston brown bread.
Jennie L. Powers	Sacramento	Domestic corn bread
Miss Mamie Newton	Woodland	Biscuit
Jennie L. Powers	Sacramento	Biscuit

SIXTH DEPARTMENT.

CLASS I—GREEN FRUITS.

Exhibitor.	Residence.	Articles.
P. H. Murphy	Brighton	Three varieties of pears
P. H. Murphy	Brighton	Six varieties of peaches
P. H. Murphy	Brighton	One variety of plums
P. H. Murphy	Brighton	Green figs
P. H. Murphy	Brighton	One variety of peaches
Mrs. T. C. Churchman	Sacramento	Six varieties of peaches
Mrs. T. C. Churchman	Sacramento	Three varieties of pears
Mrs. T. C. Churchman	Sacramento	One box orange clingstone peaches
Mrs. T. C. Churchman	Sacramento	One box white strawberry clingstone peaches
P. H. Murphy	Brighton	Display of fruit by producer
Mrs. H. Cronkite	Brighton	Six varieties of peaches
Mrs. H. Cronkite	Brighton	Three varieties of pears
W. H. Jessup	Haywards	Six varieties of apples
W. H. Jessup	Haywards	Three varieties of apples
W. H. Jessup	Haywards	Display of apples
W. H. Jessup	Haywards	Six varieties of pears
W. H. Jessup	Haywards	Three varieties of plums
W. H. Jessup	Haywards	One variety of plums
W. H. Jessup	Haywards	Display of plums
W. H. Jessup	Haywards	Display of fruit by producer
J. Lyon	Placerville	Display of apples
J. Lyon	Placerville	Six varieties of apples
J. Lyon	Placerville	Three varieties of apples
J. Lyon	Placerville	Display of peaches
J. Lyon	Placerville	Six varieties of peaches
J. Lyon	Placerville	One variety of peaches
Robert Williamson	Penryn	Display of apples
Robert Williamson	Penryn	Three varieties of apples
Robert Williamson	Penryn	Six varieties of apples
Robert Williamson	Penryn	Display of pears
Robert Williamson	Penryn	Six varieties of pears
Robert Williamson	Penryn	Three varieties of pears
Robert Williamson	Penryn	Display of peaches
Robert Williamson	Penryn	Six varieties of peaches
Robert Williamson	Penryn	One variety of peaches
Robert Williamson	Penryn	Display of plums
Robert Williamson	Penryn	Five varieties of plums
Robert Williamson	Penryn	One variety of plums
Robert Williamson	Penryn	Green figs
Robert Williamson	Penryn	Display of tropical fruits
Robert Williamson	Penryn	Great number of oranges
Robert Williamson	Penryn	Great number of lemons
Robert Williamson	Penryn	Display of fruit by producer
Charles W. Reed	Sacramento	One variety orange; clingstone peaches
John Bidwell	Chico	Display of apples
John Bidwell	Chico	Six varieties of apples
John Bidwell	Chico	Three varieties of apples
John Bidwell	Chico	Display of pears
John Bidwell	Chico	Display of peaches
John Bidwell	Chico	Display of plums

Sixth Department—Continued.

CLASS II—HONEY, PRESERVES, PICKLES, ETC.

Exhibitor.	Residence.	Articles.
Mrs. E. F. Aiken	Sacramento	Six jars blackberry jam
Mrs. H. Cronkite	Brighton	One dozen jars strawberry jelly
Mrs. H. Cronkite	Brighton	One dozen jars red currant jelly
Mrs. H. Cronkite	Brighton	Six jars black currant jelly
Mrr. H. Cronkite	Brighton	Nine jars quince jelly
Mrs. H. Cronkite	Brighton	Six jars blackberry jelly
Mrs. H. Cronkite	Brighton	Eight jars blackberry jam
Mrs. H. Cronkite	Brighton	Six jars black raspberry jam
Mrs. Wm. Bassett	Sacramento	Twelve jars (variety) fruit in glass
Mrs. Wm. Bassett	Sacramento	Six glasses red currant jelly
Wm. L. Dawson	Sacramento	Display of fruit in glass

CLASS III—DRIED AND PRESERVED FRUITS, NUTS, ETC.

Exhibitor.	Residence.	Articles.
Mrs. E. F. Aiken	Sacramento	Twenty-five pounds dried apples
Mrs. E. F. Aiken	Sacramento	Twenty-five pounds dried peaches
Mrs. E. F. Aiken	Sacramento	Twenty-five pounds dried plums
Mrs. E. F. Aiken	Sacramento	Twenty-five pounds dried prunes
Mrs. E. F. Aiken	Sacramento	Twenty-five pounds dried apricots
A. D. Miller	Brighton	Soft shell almonds
Wm. Baker	Brighton	Soft shell almonds
W. H. Jessup	Haywards	Twenty-five pounds dried apples
W. H. Jessup	Haywards	Twenty-five pounds dried peaches
W. H. Jessup	Haywards	Twenty-five pounds dried plums
W. H. Jessup	Haywards	Twenty-five pounds dried prunes
W. H. Jessup	Haywards	Twenty-five pounds dried apricots
W. H. Jessup	Haywards	Twenty-five pounds dried nectarines
W. H. Jessup	Haywards	General display of dried fruit
P. J. Isbel	Placerville	Twenty-five pounds dried plums
P. J. Isbel	Placerville	Twenty-five pounds dried nectarines
P. J. Isbel	Placerville	General display of dried fruit
Robt. Williamson	Penryn	Ten pounds dried figs
Robt. Williamson	Penryn	One half peck soft shell almonds
John Bidwell	Chico	Twenty-five pounds dried peaches
John Bidwell	Chico	Twenty-five pounds dried plums
John Bidwell	Chico	Twenty-five pounds dried prunes
John Bidwell	Chico	Twenty-five pounds dried apricots
John Bidwell	Chico	Twenty-five pounds dried nectarines
Joseph Purrington	Brighton	Twenty-five pounds dried apples
Joseph Purrington	Brighton	Twenty-five pounds dried peaches
Joseph Purrington	Brighton	Twenty-five pounds dried plums
Joseph Purrington	Brighton	Twenty-five pounds dried apricots
Joseph Purrington	Brighton	Twenty-five pounds dried pears
Joseph Purrington	Brighton	General display of dried fruit

GRAPES, BRANDY, WINE, ETC.

Exhibitor.	Residence.	Articles.
R. H. Murphy	Brighton	Six varieties of table grapes
R. H. Murphy	Brighton	Three varieties of table grapes
R. H. Murphy	Brighton	Twelve varieties of wine grapes
R. H. Murphy	Brighton	Six varieties of wine grapes
R. H. Murphy	Brighton	Three varieties of wine grapes
R. H. Murphy	Brighton	Variety of raisin grapes
R. H. Murphy	Brighton	Great variety of grapes
Robert Brown	Brighton	Three varieties of table grapes

Sixth Department—*Continued.*

Exhibitor.	Residence.	Articles.
Johnston Br. and Wine Co.	Sacramento	Grape brandy, vintage of 1879
Johnston Br. and Wine Co.	Sacramento	Grape brandy, vintage of 1880
Johnston Br. and Wine Co.	Sacramento	Grape brandy, vintage of 1881
Johnston Br. and Wine Co.	Sacramento	Claret wine, zinfandel, 1879
Johnston Br. and Wine Co.	Sacramento	Muscatel, sweet, 1880
Johnston Br. and Wine Co.	Sacramento	Angelica, 1879
Johnston Br. and Wine Co.	Sacramento	Port wine, sweet mission, 1879
Johnston Br. and Wine Co.	Sacramento	Port wine, sweet mission, 1880
Johnston Br. and Wine Co.	Sacramento	Riesling wine, dry white, 1879
R. S. Lockett	Brighton	Six varieties of table grapes
R. S. Lockett	Brighton	Three varieties of table grapes
R. S. Lockett	Brighton	Twelve varieties of wine grapes
R. S. Lockett	Brighton	Six varieties of wine grapes
R. S. Lockett	Brighton	Three varieties of wine grapes
R. S. Lockett	Brighton	Variety of raisin grapes
R. S. Lockett	Brighton	Great variety of grapes
Mrs. H. Cronkite	Brighton	Six varieties of table grapes
Mrs. H. Cronkite	Brighton	Three varieties of table grapes
C. M. Treat	Sacramento County	One dozen bottles of grape brandy, 1881
E. C. Day	Kilsey	One dozen bottles of grape brandy, 1881
J. Rutter	Florin	Display of raisins
J. Rutter	Florin	Display of seedling raisins
T. D. Morris	Sonoma	Three varieties of table grapes
T. D. Morris	Sonoma	Twelve varieties of wine grapes
T. D. Morris	Sonoma	Greatest variety of grapes
T. D. Morris	Sonoma	Six varieties of wine grapes
T. D. Morris	Sonoma	Three varieties of table grapes
Mrs. Robt. Chalmers	Coloma	One dozen grape brandy, 1881
Mrs. Robt. Chalmers	Coloma	One dozen white wine
Mrs. Robt. Chalmers	Coloma	One dozen dry wine, red
Mrs. Robt. Chalmers	Coloma	One dozen sweet wine
Mrs. Robt. Chalmers	Coloma	One dozen port wine
Mrs. Robt. Chalmers	Coloma	One dozen sherry wine
Mrs. Robt. Chalmers	Coloma	One dozen Burgundy sweet wine
John Bidwell	Chico	Six varieties of table grapes

MISCELLANEOUS DEPARTMENT.

Exhibitor.	Residence.	Articles.
C. A. Pearson	Sacramento	Burglar alarm, or call bell
R. Wheeler	Sacramento	Cannery for preserving fruits, meats, etc
Capital Packing Co.	Sacramento	Display of canned fruit and meat
McGregor Bros.	Sacramento	One dozen cantaloupes
McGregor Bros.	Sacramento	Variety of watermelons
Wilmerding & Co.	San Francisco	Display of Peruvian bitters
John M. Hooper	San Francisco	Robinson's self-adjusting chair
Bidwell & Cook	Sacramento	Display of tea and groceries
George Uhl	Sacramento	Brush dam and levee protector
Henry Fisher	Sacramento	Ninety-four tins crackers
Henry Fisher	Sacramento	Fifty boxes crackers
Henry Fisher	Sacramento	Jelly cake
Henry Fisher	Sacramento	Brown stone front cake
Henry Fisher	Sacramento	Breakfast muffins
Henry Fisher	Sacramento	Graham jems
Spruance, Stanley & Co.	San Francisco	African stomach bitters
Wilcox, Powers & Co.	Sacramento	Wild cherry tonic
C. W. Hoit	Sacramento	Fruit tree grafting machine
B. N. Bugby	Sacramento	Burglar alarm and call bell
B. N. Bugby	Sacramento	Model of drawbridge
B. N. Bugby	Sacramento	Bugby & Wible patent vehicle axle
Buell & Roberts	Sacramento	Bed springs
J. Lyon	Placerville	One variety nectarines
G. W. Yount	Dixon	Display of olive oil

Sixth Department—Continued.

Exhibitor.	Residence.	Articles.
Mrs. R. Chalmers	Coloma	One dozen Chalmers' Catawba wine bitters
Mrs. R. Chalmers	Coloma	Blackberry cordial
Mrs. R. Chalmers	Coloma	Blackberry brandy
Truman S. Clark & Son	San Francisco	Gaspipe iron bedstead, with wire mattress attached.
Truman S. Clark & Son	San Francisco	Loom for weaving mattresses
A. J. McLeod	Livermore	Display of squirrel poison
G. W. Chesley	Sacramento	Maple rum
G. W. Chesley	Sacramento	Rock and rye
G. W. Chesley	Sacramento	Blackberry brandy
G. W. Chesley	Sacramento	Cundurango bitters
B. F. Wellington	San Francisco	Improved egg food
James H. Lawrence	Sacramento	Display of fancy tinware

SEVENTH DEPARTMENT.

FINE · ARTS.

Title.	Artist.
STATUARY.	
Veiled Cupid (Rome)	Antonio Rosette
Infant (Florence)	Pierrini Bazzaeete
Bust—Laughing (Florence)	Ildegardo Pazzagli
Bust—Crying (Florence)	Ildegardo Pazzagli
Plaster Casts and Molds (Sacramento)	A. Casselli
OIL PAINTINGS.	
Flowers	Miss F. Bartholomew
Flowers	Miss F. Bartholomew
Yosemite	Wm. Keith
Landscape	Miss C. E. Usher
Tropic Scene	Norton Bush
Waterfall	Norton Bush
Portrait	H. Raschen
Entrance to the Truckee River (Lake Tahoe)	Norton Bush
Guayaquil River (Eucador)	Norton Bush
Landscape from Jules Dupre	Wm. Keith
Going Home	L. P. Latimer
In the Woods	Thomas Hill
Roscoe	Norton Bush
Old Homestead in New Hampshire	Wm. Keith
Tropical River Scene	Norton Bush
Interior Wood Scene	Nellie Hopps
Decorated Mirror	Mrs. L. Irelan
Autumn Scene	Nellie Hopps
California	A. D. Cooper
Scene in Alexandria (copy from the French)	May I. Briggs
Moonlight and Firelight	Norton Bush
Sketch of Indian Camp (Lake Tahoe)	Nellie Hopps
White Mountains	Wm. Keith
Western Slope of the Cordilleras	Norton Bush
Chickens	Mrs. L. Irelan
View on the Saco River (New Hampshire)	Wm. Keith
Morning Glories (water color)	Mrs. L. Irelan
White Fish	S. M. Brookes

Seventh Department—Continued.

Title.	Artist.
Salmon Trout	S. M. Brookes
Herring	S. M. Brookes
Flowers (bronze plaque)	Mrs. L. Irelan
Snow Plant (water color)	Mrs. L. Irelan
In the Sierras	W. F. Jackson
Broken Wreath	Mrs. L. Irelan
Flower Piece (Morning Glories)	Mrs. L. Irelan
Rabbit	Norton Bush
Cascade Lake (near Lake Tahoe)	Thomas Hill
Near San Mateo	Wm. Keith
Creek Scene	Wm. Keith
Portrait	Lussier
Portrait	Lussier
Juliet in Friar Laurence's Cell	Theo. Wores
White Mountain Notch (New Hampshire)	Thomas Hill
Coast Scene	L. P. Latimer
Jolly Times	H. Raschen
View in Nicaragua	Norton Bush
View in Nicaragua	Norton Bush
ORIGINAL COLLECTION	
Of Indian Chiefs, painted by George Catlin during the years 1832, 1833, 1834, 1835, 1836, 1837, and 1838. *Catlin's fame rests upon having painted the* portraits of all the noted Chiefs of the Indian tribes of the Western States and Territories, in their own wigwams and wilds. Among the most noted are the portraits of Black Hawk, which was painted while he was a prisoner in St. Louis; The Prophet, who was the instigator of the Black Hawk war; and Wa-saw-me-saw (Roaring Thunder), youngest son of Black Hawk. These are the *only pictures by Catlin known to be in* existence, and possess great historic interest and value. This is the first time they have been placed on exhibition in California.	
Wee-skeet	George Catlin
Mong-shong-sha (wife of Smoke)	George Catlin
Gray Haired Mandin Children	George Catlin
Sand Bar	George Catlin
Black Rock Sioux	George Catlin
Wah-to-see-sah, killed by Shonka, the Dog (Sioux)	George Catlin
Wolf Chief—Mandin Tribe	George Catlin
Ha-wan-se-tah (The One Horn), Chief of the Sioux	George Catlin
The Prophet	George Catlin
Sha-ra-kah—Mandin Tribe	George Catlin
Shoo-de-sah-ra (Smoke)	George Catlin
Rah-pope	George Catlin
Youngest Son of Black Hawk	George Catlin
Ojibbuany	George Catlin
Buckram	George Catlin
Black Hawk	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Indian Head	George Catlin
Odeliska	P. Gelommi
The Monk	G. Castagnola
Roman Costume	Unknown
Neapolitan Head	Unknown
Fruit Piece	O. Costa
Fruit Piece	O. Costa
Broken Pot	O. Costa
Ione and Nidia	Ted'o Maldarelli, Naples

Seventh Department—Continued.

Title.	Artist.
Spring (near San Mateo)	Jules Tavenier
Glen Alpine Creek	W. F. Jackson
Woodland Stream	W. F. Jackson
The Muses (after Cabanel)	W. F. Jackson
Mount Tallac and Falling Leaf Lake	W. F. Jackson
Coast Scene—Sunrise	F. A. Silva, New York
Wrangel Island (Arctic Ocean)	G. J. Denny
Flowers	E. Bartholomew
Still Life	E. Bartholomew
Salmon	S. M. Brookes
Mount Popocatapetl (Mexico)	Norton Bush
Adelaide Neilson	A. D. Cooper
Coast Scene near Pescadero	Norton Bush
Mary Stuart's Last Prayer	H. Raschen
Snow Plants	Mrs. Wm. Beckman
New England Summer Scene	Wm. Keith
Flowers	Mrs. E. Keith
Interior Wood Scene	L. P. Latimer
In the Coast Range	L. P. Latimer
Cascade Creek (Lake Tahoe)	Nellie Hopps
Figure Piece	Miss C. E. Usher
Basket of Flowers	Miss Polly Barker
CRAYON DISPLAY.	
The Stag	Addie L. Hughes
Crayon Drawing	Emilie C. Klippel
Dog's Head	Addie L. Hughes
Horses	Addie L. Hughes
Portrait	C. E. Usher
Pen Drawing in India Ink (Portrait)	J. A. Stanton
Lee-Savant	J. A. Stanton
The Serenade	J. A. Stanton
Spring	J. A. Stanton
Chinatown (Monterey)	J. A. Stanton
Crayon Portrait	W. F. Jackson
Crayon Head	Emilie C. Klippel
Crayon Figure	C. E. Usher
Crayon Head	C. E. Usher
Crayon Head	Emilie C. Klippel
Crayon Drawing	Emilie C. Klippel
Crayon Drawing	Addie L. Hughes
Crayon Drawing	Addie L. Hughes
Crayon Drawing	Lillie B. Cutter
Crayon Drawing	Lillie B. Cutter
Crayon Drawing	Lillie B. Cutter
PHOTOGRAPHIC DISPLAY.	
Portrait	J. Boyson, Colusa
Portrait	J. Boyson, Colusa
Portrait	J. Boyson, Colusa
Portrait	J. Boyson, Colusa
Cabinets, Boudoirs, Panels, Imperials, both colored and plain	J. A. Todd, Sacramento
ARTISTIC PHOTOGRAPHIC WORK,	
Consisting of a mammoth display of cabinets, boudoir, and panel pictures, comprising every style of direct pictures made in the United States; also 117 Direct Photographic Portraits, the face measurement of which will average five and one half inches. The center picture represents Maudy Hodson, and positively is the largest direct portrait on the Pacific Coast, by	J. R. Hodson, Sacramento
Display of Photographs, Oil, Crayon, and Water Colors	J. W. Leftwich, Sacramento

SHAFTER PREMIUMS OF ONE HUNDRED DOLLARS IN PLATE.

Will be awarded as follows: Fifty dollars, in plate, to the Miss, under eighteen years of age, making, unaided, the best loaf of wheat bread, and the best loaf of brown bread. The same to be placed upon exhibition in the Pavilion by noon of the second day of the Fair, Tuesday, September 12, 1882. Also, fifty dollars, in plate, to the young man, under twenty-one years of age, for the best exhibit of any product of mechanical, agricultural, or other industrial occupation. Open to the entire State. Entrance fee omitted. The award of fifty dollars was made to Frank M. McKeever, for his steam engine. The award of the Shafter prize, for the best loaf of white and brown bread, was given to Miss Jennie L. Powers, of Sacramento.

WEDNESDAY, SEPTEMBER 13TH.

WALKING MATCH FOR DRAFT STALLIONS.

One mile; draw a ton of grain on light four-wheeled wagon. First prize, farm wagon, value one hundred and fifty dollars; second prize, twenty-five dollars.

Name of Horse.	Owner.	P. O. Address.
Conqueror	C. Porter	Marysville
Honest John	T. W. Williamson	Sacramento
Onward	H. W. Wilson	Nicolaus

First prize awarded to Onward; second prize awarded to Conqueror.

Time—12:40½.

FRIDAY, SEPTEMBER 15TH.

LADIES' TOURNAMENT.

Names of Ladies.	Residence.	Colors Worn.
Mrs. Katie George		Navy Blue
Miss Belle Ellis	Sacramento	Blue
Miss Eva Carpenter		Plum
Mrs. Trefry	Chico	Navy Blue
Miss Mabel Limbach	Sacramento	Blue
Miss Nellie Ryan	Sacramento	Black
Miss Edith Radford	Sacramento	Blue Black
Miss Alice Odbert	Brighton	Black
Miss Emma Lovdal	Sacramento	Green
Miss Katie Lovdal	Sacramento	Blue
Miss Marchang	Alameda	Gray

First prize, Miss Marchang; second prize, Miss Belle Ellis; third prize, Miss Nellie Ryan; fourth prize, Mrs. Trefry; fifth prize, Miss Katie Lovdal; sixth prize, Miss Limbach; seventh prize, Miss Carpenter; eighth prize, Miss Katie George; ninth prize, Miss Alice Odbert; tenth prize, Miss Radford; eleventh prize, Miss Emma Lovdal.

There being fourteen prizes, the Judges awarded the three remaining to the three best bareback riders, as follows: First, Miss Carpenter; second, Miss Mabel Limbach; third, Miss Nellie Ryan.

SPEED PROGRAMME—1882.

MONDAY, SEPTEMBER 11TH.

RACE NO. 1—RUNNING.

Introduction Stake, for all ages. Dash of three fourths of a mile. Entrance, fifty dollars; forfeit, fifteen dollars; two hundred dollars added; second to save stake.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.	Color.	Age.	Weight.
Ella Doane, by Wildidle; dam, Nellie Brown	H. C. Judson	Santa Clara	Bay	Aged	114 pounds
Forest King, by Monday; dam, Abbie W.	C. Van Buren	Mayfield	Bay	3 years	95 pounds
Kate Carson, by Joe Daniels; dam, by Norfolk	G. W. Trahern	Stockton	Chestnut	3 years	92 pounds
Bob, by Bob Wooding; dam, Gladiola	Wm. Boots	Milpitas	Bay	3 years	92 pounds
Joe Daniels, Jr., by Joe Daniels; dam, by Woodburn	John Green	San Francisco	Bay	4 years	108 pounds
Atlanta, by Norfolk; dam, Lady Jane	Theo. Winters	Sacramento	Chestnut	3 years	92 pounds
Jim Douglass, by Wildidle; dam, by Norfolk	Geo. Howson	Sacramento	Bay	4 years	108 pounds
Duke of Monday, by Monday; dam, Demirep	Geo. Hearst	San Francisco	Bay	3 years	95 pounds
Jim Renwick, by Joe Hooker; dam, Big Gun	Stemler & Ayres	Portland, O.	Chestnut	4 years	105 pounds
Premium, by Carter; dam, Flying Cloud	Cy. Mulky	Portland, O.	Chestnut	10 years	111 pounds

Position at Starting.

1. Bob
2. Jim Douglass
3. Kate Carson
4. Jim Renwick
5. Forest King
6. Atlanta
7. Ella Doane
8. Premium

Position at Close.

Premium	1
Ella Doane	2
Jim Douglass	3

Time—1:16.

RACE NO. 2—RUNNING.

Breeders' Stake, for foals of 1879. Entrance, fifty dollars, p. p.; three hundred dollars added. One and one-half mile dash. Entries closed March 1, 1881.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.	Color.	Weight.
Captain Kidd, by Leinster; dam, Tibbie Dunbar	John Windover	Sacramento	Bay	110 pounds
Lizzie P., by Leinster; dam, Addie A.	John Windover	Sacramento	Bay	107 pounds
Cy. Mulky, by Leinster; dam, Irene Harding	John Windover	Sacramento	Bay	110 pounds
ch. c., by Leinster; dam, Little Sophie	John Windover	Sacramento	Chestnut	110 pounds
Hattie Ball, by Leinster; dam, Lottie Lee	John Windover	Sacramento	Chestnut	107 pounds
Belle S., by Bazaar; dam, Avail	George Hearst	San Francisco	Chestnut	107 pounds
Maria F., by Leinster; dam, Flush	George Hearst	San Francisco	Chestnut	107 pounds
Duke of Monday, by Monday; dam, Demirep	George Hearst	San Francisco	Bay	110 pounds
Judge McKinstry, by Thad. Stevens (or Grinsted); dam, Katie Pease	James Mee	San Francisco	Bay	110 pounds
Roderick Dhu, by Joe Daniels; dam, Wild Rose	James B. Chase	San Francisco	Bay	110 pounds
Annie Laurie, by Hubbard; dam, Mayflower	James B. Chase	San Francisco	Chestnut	107 pounds
Evangeline, by Longfellow; dam, Robin Girl	Palo Alto Stock Farm	San Mateo	Chestnut	107 pounds
Cornucopia, by Virgil; dam, Rivulet, by Rivoli	Palo Alto Stock Farm	San Mateo	Black	107 pounds
Conquest, by Lever; dam, Cuba, by Imported Australian	Palo Alto Stock Farm	San Mateo	Chestnut	110 pounds
Precious, by Lever; dam, Frolic, by Thunder	Palo Alto Stock Farm	San Mateo	Bay	107 pounds
b. c., by Norfolk; dam, Balinette	Theodore Winters	Sacramento	Bay	110 pounds
Duchess of Norfolk, by Norfolk; dam, Maria	Theodore Winters	Sacramento	Bay	107 pounds
ch. f., by Norfolk; dam, Mattie A.	Theodore Winters	Sacramento	Chestnut	107 pounds
Idler, by Wildidle; dam, Katie Gift	W. A. J. Gift	Martinez	Bay	110 pounds

Position at Starting.	*Position at Close.*	
1. Captain Kidd	Precious	1
2. Maria F.	Duke of Monday	2
3. Duke of Monday	Captain Kidd	3
4. Precious	Maria F.	4

Time—2:38.

RACE NO. 3—SELLING RACE.

Free for all; one mile and repeat. Second horse, seventy-five dollars. Entrance, five per cent, to third horse. Horses entered to be sold for fifteen hundred dollars to carry entitled weight, one pound off for each one hundred dollars under fixed valuation. Premiums—First horse, one hundred and seventy-five dollars; second horse, seventy-five dollars; third horse, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.	Color.	Age.	Weight.	Valuation.
Patrol, by Wildidle; dam, Nettie Brown	H. C. Judson	Santa Clara	Bay	3 years	95 pounds	$1,500
Inauguration, by Wildidle; dam, Miami	William Boots	Milpitas	Chestnut	3 years	95 pounds	$1,500
Shiner, by Norfolk; dam, by Rifleman	Ab. Ellis	Colusa	Brown	Aged	100 pounds	$400
Jack Douglass, by Wildidle; dam, Lady Clare	John A. Cardinell	San Francisco	Chestnut	5 years	104 pounds	$500
Sister to Lottery, by Monday; dam, Virginia	H. Schwartz	San Francisco	Bay	3 years	82 pounds	$500
Haddington, by imported Haddington; dam, by Norfolk	P. J. Shafter	San Francisco	Bay	5 years	109 pounds	$1,000
Vila Randlett, by Waterford; dam, Little Sophie	W. L. Pritchard	Sacramento	Gray	4 years	100 pounds	$1,000
Euchre, by Leinster; dam, Flush	J. T. Gilmer	Salt Lake	Chestnut	5 years	105 pounds	$600
Joe Howell, by Bonnie Scotland; dam, Etta Shippin	Stemler & Ayres	Portland, O.	Bay	10 years	105 pounds	$900

Position at Starting.	*Position at Close.*		
1. Joe Howell	Joe Howell	1	1
2. Inauguration	Inauguration	3	2
3. Vila Randlett	Vila Randlett	4	3
4. Euchre	Euchre	2	4
5. Patrol	Patrol	5	5

Time—1:44; 1:44.

RACE NO. 4—TROTTING.

2:40 Class. Mile heats; best three in five. Purse, one thousand dollars. First horse, six hundred dollars; second horse, three hundred dollars; third horse, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Vanderlynn, by Geo. M. Patchen; dam, a Joseph mare	Patrick Farrell	San Francisco
Freestone, by Capt. Webster; dam, by Owen Dale	M. Rollins	San Francisco
Allen Roy, unknown	G. Bernard	San Francisco
Frank Moscow, unknown	A. B. Cooper	Alameda
Manon, by Nutwood; dam, Addie	C. Van Buren	Mayfield
Marin, by Patchen; dam, unknown	B. F. Miller	San Rafael
Slim Jim, by Tyler horse; dam, unknown	C. H. Shear	Sacramento
Louis D., by King William; dam, unknown	Louis Duncan	Santa Clara
Rowdy Boy, by Rustic; dam, by Belmont	James Garland	San Francisco
Big Lize, by ———	W. H. Henderson	San José
Edwin Forrest, by Blackbird; dam, unknown	John McIntyre	Sacramento

Position at Starting.	*Position at Close.*				
1. Manon	Louis D.	4	1	1	1
2. Rowdy Boy	Big Lize	6	2	5	2
3. Louis D.	Manon	1	3	3	3
4. Marin	Vanderlynn	5	6	2	4
5. Vanderlynn	Rowdy Boy	2	5	6	5
6. Big Lize	Marin	3	4	4	6

Time—2:25; 2:24¾; 2:24¾; 2:25½.

TUESDAY, SEPTEMBER 12TH.

RACE NO. 5—TROTTING.

2:25 Class. Mile heats, best three in five. Purse, one thousand two hundred dollars. First horse, seven hundred and twenty dollars; second horse, three hundred and sixty dollars; third horse, one hundred and twenty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Starr King, by Geo. M. Patchen, Jr.; dam, Mary Wonder	Charles W. Welby	San Francisco
Ashley, by Plumas; dam, by George	Jackson Cochran	Chico
Del Sur, by The Moor; dam, Gretchen	L. J. Rose	San Gabriel
Captain Smith, by Locomotive; dam, Maid of Clay	Palo Alto Stock Farm	San Mateo Co
Crown Point, by Speculation; dam, Young Martha	G. Valensin	Sacramento
Honesty, by Priam; dam, by Chieftain	J. H. Dodge	Stockton
Reliance, by Alexander; dam, Rattler mare	James M. Learned	Stockton
Director, by Dictator; dam, by Mambrino Chief	J. A. Goldsmith	Oakland
Cairo, by Chieftain; dam, by Odd Fellow	John Hughes	San Francisco

Position at Starting.	*Position at Close.*				
1. Del Sur	Director	2	1	1	1
2. Reliance	Honesty	4	4	6	2
3. Director	Del Sur	5	5	5	3
4. Crown Point	Cairo	7	3	3	4
5. Starr King	Captain Smith	3	6	4	5
6. Honesty	Starr King	1	2	2	6
7. Captain Smith	Crown Point	6	7	dr	
8. Cairo	Reliance	dis			

Time—2:23½; 2:25½; 2:24; 2:25.

RACE NO. 6—TROTTING.

Yearlings. Mile Dash. Purse, three hundred dollars. First horse, one hundred and eighty dollars; second horse, ninety dollars; third horse, thirty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Chevalier, by Brigadier; dam, Kit, by Billy McCracken	Charles Sherman	Marysville
Dawn, by Nutwood; dam, Countess	George Baylis	Petaluma
Mt. Vernon, by Nutwood; dam, Daisy	J. H. McCloud	Stockton
Rose Abbott, by Abbottsford; dam, Young Rosedale	Ben. E. Harris	San Francisco
b. c., by Sultan; dam, Gertrude	L. J. Rose	San Gabriel
ch. f., by Priam; dam, by Chieftain	W. H. Parker	Stockton
Antevolo, by Electioneer; dam, Columbine	Joseph C. Simpson	San Francisco

Position at Starting.	Position at Close.	
1. b. c., by Sultan	b. c., by Sultan	1
2. Chevalier	ch. f., by Priam	2
3. Rose Abbott	Chevalier	3
4. Mt. Vernon	Mt. Vernon	4
5. ch. f., by Priam	Rose Abbott	5

Time—3:04½.

RACE NO. 7—TROTTING.

Two-year-olds. Mile heats, two in three. Purse, five hundred dollars. First horse, three hundred dollars; second horse, one hundred and fifty dollars; third horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Neluska, by Sultan; dam, Gretchen	L. J. Rose	San Gabriel
Ruby, by Sultan; dam, by Hambletonian	S. Rosener	San Francisco
Flower Girl, by Electioneer; dam, Mayflower	Palo Alto Stock Farm	San Mateo Co
Sallie Benton, by General Benton; dam, Sontag's Mohawk	Palo Alto Stock Farm	San Mateo Co
Pride, by Buccaneer; dam, by Flaxtail	M. W. Hicks	Florin

Position at Starting.	Position at Close.			
1. Ruby	Ruby	1	2	1
2. Neluska	Pride	3	3	2
3. Pride	Neluska	2	1	3

Time—2:33; 2:33; 2:34½.

WEDNESDAY, SEPTEMBER 13TH.

RACE NO. 8—RUNNING.

Filly Stake for two-year-olds. Five eighths of a mile. Two hundred dollars added. Entrance, fifty dollars; forfeit, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Flou Flou, by Monday; dam, Jennie C.	C. Van Buren	Mayfield
Satanella, by Leveler; dam, by Asteroid	Palo Alto Stock Farm	San Mateo Co
Satinet, by Wildidle; dam, Rose, by Chieftain	Palo Alto Stock Farm	San Mateo Co
Lou Spencer, by Norfolk; dam, Ballerina	Theodore Winters	Sacramento
Rosa B., by Norfolk; dam, Addie A.	Theodore Winters	Sacramento
Augusta E., by Monday; dam, by Norfolk	George Howson	Sacramento
Nubia, by Leinster; dam, Addie A.	J. B. Haggin	San Francisco
Irene, by Leinster; dam, Irene Harding	J. B. Haggin	San Francisco

RACE NO. 8—Continued.

Position at Starting.	Position at Close.	
1. Flou Flou	Flou Flou	1
2. Augusta E.	Augusta E.	2

Time—1:02½.

RACE NO. 9—RUNNING.

California Derby Stake, for three-year-olds. One and one half mile dash. Two hundred and fifty dollars added. Entrance, one hundred dollars; forfeit, twenty-five dollars.

Name and Pedigree of Horse.	By whom Entered.	P. O. Address.
Precious, by Lever; dam, Frolic, by Thunder	Palo Alto Stock Farm	San Mateo
Judge McKinstry, by Grinstead; dam, Katie Pease	James Mee	San Francisco
Capt. Kidd, by Leinster; dam, Tibbie Dunbar	W. L. Pritchard	Sacramento
Hattie Ball, by Leinster; dam, Lottie Lee	W. L. Pritchard	Sacramento
Maria F., by Leinster; dam, Flush	Geo. Hearst	San Francisco
Duke of Monday, by Monday; dam, Demirep	Geo. Hearst	San Francisco

Position at Starting.	Position at Close.	
1. Duke of Monday	Duke of Monday	1
2. Maria F.	Maria F.	2
3. Capt. Kidd	Capt. Kidd	3

Time—2:40.

RACE NO. 10—RUNNING.

Jennie B. Stake, free for all. Mile dash. Two hundred dollars added. Entrance, fifty dollars; forfeit, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
May D., by Wildidle; dam, Nettie Brown	H. C. Judson	Santa Clara
Forest King, by Monday; dam, Abbie W.	C. Van Buren	Mayfield
Bob, by Bob Wooding; dam, by Gladiator	Wm. Boots	Milpitas
Fostress, by Foster; dam, Planetia, by Planet	Palo Alto Stock Farm	San Mateo Co
Night Hawk, by imported Haddington; dam, by Norfolk	P. J. Shafter	San Francisco
Duke of Norfolk, by Norfolk; dam, Marian	Theo. Winters	Sacramento
Atlanta, by Norfolk; dam, Lady Jane	Theo. Winters	Sacramento
Lizzie P., by Leinster; dam, Addie A.	W. L. Pritchard	Sacramento
Frank Rhoads, by Leinster; dam, Addie A.	W. L. Pritchard	Sacramento
Jim Douglass, by Wildidle; dam, Norfolk mare	Geo. Howson	Sacramento
Duke of Monday, by Monday; dam, Demirep	Geo. Hearst	San Francisco
Red Boy, by War Dance; dam, imported Neilson	J. T. Gilmer	Salt Lake, Utah
Fred Collier, by Joe Hooker; dam, Puss, by Norfolk	Stemler & Ayres	Portland, Or

Position at Starting.	Position at Close.	
1. May D.	Night Hawk	1
2. Frank Rhoads	Red Boy	2
3. Forest King	May D.	3
4. Night Hawk	Forest King	4
5. Red Boy	Frank Rhoads	5

Time—1:42¼.

RACE NO. 11—RUNNING.

Selling Race. Dash of one and one eighth miles. Purse, two hundred and fifty dollars. Entrance, five per cent, to third horse. First horse, one hundred and fifty dollars; second horse, one hundred dollars; third horse, one hundred and twelve dollars and fifty cents.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.	Color.	Age.	Weight.	Valuation.
Belshaw, by Wildidle; dam, Susie W.	H. C. Judson	Santa Clara	Bay g.	4 years	93 pounds	$400
Joe Daniels, Jr., by Joe Daniels; dam, Jule	J. N. Randall	Stockton	Chestnut g.	Aged	97 pounds	$250
Lady Partisan, by imported Partisan; dam, Jule	A. Miller	Sacramento	Bay f.	3 years	92 pounds	$1,000
Jubilee, by Norfolk; dam, by Lodi	Thomas Hazlett	Colusa	Chestnut h.	5 years	100 pounds	$300
Sister to Lottery, by Monday; dam, Virginia	H. Schwartz	San Francisco	Bay f.	3 years	82 pounds	$500
Vila Randlett, by Waterford; dam, Little Sophie	W. L. Pritchard	Sacramento	Gray f.	4 years	105 pounds	$1,000
Cy Mulky, by Leinster; dam, Irene Harding	W. L. Pritchard	Sacramento	Bay c.	3 years	95 pounds	$1,000
Euchre, by Leinster; dam, Flush	J. T. Gilmer	Salt Lake City	Chestnut h.	5 years	106 pounds	$600
Joe Howell, by Bonnie Scotland; dam, Etta Shippen	Stemler & Ayres	Portland, O.	Bay g.	10 years	107 pounds	$800

Position at Starting.	*Position at Close.*	
1. Joe Daniels, Jr.	Joe Howell	1
2. Joe Howell	Joe Daniels, Jr.	2
3. Lady Partisan	Lady Partisan	3

Time—2:00½.

RACE NO. 12—TROTTING.

2:30 Class. Mile heats, best three in five. Purse, twelve hundred dollars. First horse, seven hundred and twenty dollars; second horse, three hundred and sixty dollars; third horse, one hundred and twenty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Blanche, by Gray McClellan; dam, by John Nelson	Steve Crandall	Santa Rosa
Poscora Hayward, by Billy Hayward; dam, by Lady Poscora	W. D. Hammond	Oakland
Manon, by Nutwood; dam, Addie	C. Van Buren	Mayfield
Sweetness, by Volunteer; dam, by Edward Everett	J. A. Goldsmith	Oakland
Albert W., by Electioneer; dam, by John Nelson	A. Waldstein	San Francisco
Nellie R., by General McClellan, Jr.; dam, Susie Rose	S. Sperry	Petaluma
Tump Winston, by Primus; dam, Lady Don	Eugene Mara	Carson, Nevada

Position at Starting.	*Position at Close.*			
1. Tump Winston	Sweetness	1	1	1
2. Manon	Nellie R.	3	4	2
3. Albert W.	Manon	4	3	3
4. Sweetness	Albert W.	2	2	4
5. Nellie R.	Tump Winston	5	5	5

Time—2:24; 2:21¼; 2:22½.

THURSDAY, SEPTEMBER 14TH.

RACE NO. 13—TROTTING.

2:22 Class. Mile heats, three in five. Purse, twelve hundred dollars. First horse, seven hundred and twenty dollars; second horse, three hundred and sixty dollars; third horse, one hundred and twenty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Brigadier, by Happy Medium; dam, Lady Turner	J. B. McDonald	Marysville
Belle Echo, by Echo; dam, by Old Belmont	L. H. Titus	San Gabriel
Romero, by A. W. Richmond; dam, by Mambrino Pilot	J. A. Goldsmith	Oakland

Position at Starting.	*Position at Close.*						
1. Romero	Brigadier	3	2	1	1	0	1
2. Brigadier	Belle Echo	2	3	3	3	0	2
3. Belle Echo	Romero	1	1	2	2	3	3

Time—2:22½; 2:20; 2:23; 2:28½; 2:27¼; 2:25½.

RACE NO. 14—PACING.

2:25 Class. Mile heats, three in five. Purse, five hundred dollars. First horse, three hundred dollars; second horse, one hundred and fifty dollars; third horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Corette, by Winthrop; dam, Cora, by Kentucky Hunter	L. E. Yates	Oakland
Oakland Boy, by Winthrop; dam, Blackbird mare	A. S. Hinds	Oakland
Lady Hays, by Hy Tracy; dam, Wilson mare	E. S. Dennison	Oakland
Ouida, by Black Hawk; dam, Fannie King	G. Valensin	Sacramento

RACE NO. 14—Continued.

Position at Starting.	Position at Close.				
1. Lady Hays	Corette	4	1	1	1
2. Corette	Ouida	1	4	3	2
3. Oakland Boy	Oakland Boy	3	3	2	3
4. Ouida	Lady Hays	2	2	4	4

Time—2:24; 2:23¼; 2:25; 2:27.

RACE NO. 15—TROTTING.

2:40 Class. Two miles and repeat. Purse, eight hundred dollars. First horse, four hundred and eighty dollars; second horse, two hundred and forty dollars; third horse, eighty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
San Mateo Belle, by Speculation; dam, Young Lady Vernon	W. Z. Price	San Mateo
Vanderlynn, by Geo. M. Patchen; dam, Joseph mare	Pat. Farrell	San Francisco
Freestone, by Captain Webster; dam, Owen Dale mare	M. Rollins	San Francisco
Slim Jim, by Tyler horse; dam, unknown	C. H. Shear	Sacramento
Exile, by Echo; dam, Belmont mare	L. H. Titus	San Gabriel
Edwin Forrest, by Black Bird; dam, unknown	Jno. McIntyre	Sacramento

Position at Starting.	Position at Close.		
1. Vanderlynn	Vanderlynn	1	1
2. Slim Jim	San Mateo Belle	2	2
3. San Mateo Belle	Slim Jim	3	dis

Time—5:03¼; 5:07.

FRIDAY, SEPTEMBER 15TH.

RACE NO. 16—RUNNING.

Colt and Filly Stake, for two-year-olds. Dash of a mile. Two hundred dollars added. Entrance, fifty dollars; forfeit, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Panama, by Shannon; dam, Abbie W.	C. Van Buren	Mayfield
Flou Flou, by Monday; dam, Jennie C.	C. Van Buren	Mayfield
Certiorari, by Joe Daniels; dam, by Norfolk	G. W. Trahern	Stockton
Satanella, by Leveler; dam, Frou Frou	Palo Alto Stock Farm	San Mateo Co
May B., by Shannon; dam, Jessie R.	P. Robson	San Francisco
Lou Spencer, by Norfolk; dam, Ballerina	Theodore Winters	Sacramento
Augusta E., by Monday; dam, by Norfolk	George Howson	Sacramento
Nubia, by Leinster; dam, Addie A.	J. B. Haggin	San Francisco
Irene, by Leinster; dam, Irene Harding	J. B. Haggin	San Francisco
Young Flush, by Leinster; dam, Flush	J. B. Haggin	San Francisco

Position at Starting.	Position at Close.	
1. Certiorari	Flou Flou	1
2. Flou Flou	May B.	2
3. May B.	Certiorari	3

Time—1:46¼.

RACE NO. 17—RUNNING.

Selling Race. Dash of one and a quarter miles, for all ages. Purse, three hundred dollars. Entrance, five per cent, to third horse. One hundred dollars to second horse; one hundred and eighty dollars to first horse. Horses entered for fifteen hundred dollars, entitled weight; twelve hundred dollars, three pounds off; one thousand dollars, five pounds off; seven hundred and fifty dollars, seven pounds off; five hundred dollars, ten pounds off.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.	Color.	Age.	Weight.	Value.
Ella Doane, by Wildidle; dam, Nettie Brown	H. C. Judson	Santa Clara	Bay mare	Aged	108 pounds	$1,200
Belshaw, by Wildidle; dam, Susie W.	H. C. Judson	Santa Clara	Bay geld.	4 years	95 pounds	$400
Idler, by Wildidle; dam, Kate Gift	M. Piggott	Milpitas	Bay colt	3 years	90 pounds	$1,000
Geo. Bender, sire unknown; dam, Sugar Plum	Seth Peyton	Stockton	Bay geld.	Aged	101 pounds	$500
Shiner, by Norfolk; dam, by Rifleman	Ab. Ellis	Colusa	Br. geld.	Aged	101 pounds	$500
Jubilee, by Norfolk; dam, by Lodi	Thos. Hazlett	Colusa	Ch. horse	5 years	104 pounds	$500
Sister to Lottery, by Monday; dam, Virginia	H. Schwartz	San Francisco	Bay filly	3 years	82 pounds	$500
Haddington, by imported Haddington; dam, by Norfolk	P. J. Shafter	San Francisco	Bay horse	5 years	109 pounds	$1,000
Vila Randlett, by Waterford; dam, Little Sophie	W. L. Pritchard	Sacramento	Gray filly	4 years	100 pounds	$1,000
Cy Mulky, by Leinster; dam, Irene Harding	W. L. Pritchard	Sacramento	Bay colt	3 years	90 pounds	$1,000
Euchre, by Leinster; dam, Flush	J. T. Gilmer	Salt Lake City	Ch. horse	5 years	107 pounds	$600
Joe Howell, by Bonnie Scotland; dam, Etta Shippen	Stemler & Ayres	Portland, Or.	Bay geld.	10 years	101 pounds	$500

Position at Starting.	*Position at Close.*	
1. Sister to Lottery	Ella Doane	1
2. Euchre	Haddington	2
3. Haddington	Vila Randlett	3
4. Ella Doane	Sister to Lottery	4
5. Vila Randlett	Euchre	5

Time—2:10¾.

Race No. 18—Running.

Post Stake. Three miles dash; free for all. Five hundred dollars added. Second horse, one hundred and fifty dollars; third horse, one hundred dollars. Weight, one hundred pounds; three years old, ninety pounds. Entrance, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mollie H., by Wildidle; dam, Mamie Hall	William Boots	Milpitas
——,	Palo Alto Stock Farm	San Mateo Co
Captain Kidd, by Leinster; dam, Tibbie Dunbar	W. L. Pritchard	Sacramento
——,	George Hearst	San Francisco
——,	J. T. Gilmer	Salt Lake City
Fred Collier, by Joe Hooker; dam, Puss, by Norfolk	Stemler & Ayres	Portland, Or

Position at Starting.	*Position at Close.*	
1. Fred Collier	Fred Collier	1
2. Captain Kidd	Mollie H.	2
3. Mollie H.	Captain Kidd	3

Time—Three miles, 5:40.

Race No. 19—Running.

Consolation Purse, two hundred and fifty dollars. Mile and repeat. Entrance free. For beaten horses. First horse, two hundred dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Atlanta, by Norfolk; dam, Lady Jane	Theodore Winters	Sacramento
Jim Douglass, by Wildidle; dam, by Norfolk	George Howson	Sacramento
May D., by Wildidle; dam, Nettie Brown	W. Appleby	Santa Clara
Maria F., by Leinster; dam, Flush	P. Duffy	Sacramento

Position at Starting.	*Position at Close.*			
1. Atlanta	Maria F.	4	1	1
2. May D.	Atlanta	1	3	2
3. Maria F.	Jim Douglass	3	4	3
4. Jim Douglass	May D.	2	2	4

Time—1:44¼; 1:47; 1:47.

SATURDAY, SEPTEMBER 16th.

Race No. 20—Running.

Mile and repeat. Free for all. Purse, three hundred and fifty dollars. First horse, thirty dollars; five per cent to second horse; fifty dollars to third horse.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Joe Howell, by Bonnie Scotland; dam, Etta Shippen	Stemler & Ayres	Portland, Or
Frank Rhoads, by Leinster; dam, Addie A.	W. L. Pritchard	Sacramento
Night Hawk, by Haddington; dam, by Norfolk	P. J. Shafter	Olema
Maria F., by Leinster; dam, Flush	J. B. Haggin	San Francisco

RACE NO. 20—Continued.

Position at Starting.	*Position at Close.*	
1. Joe Howell	Joe Howell	1 1
2. Night Hawk	Night Hawk	2 2
3. Frank Rhoads	Frank Rhoads	3 3

Time—1:43½; 1:45.

RACE NO. 21—RUNNING.

Dash of one mile. Saddle horse race. Purse, one hundred dollars. First horse, sixty dollars; second horse, twenty-five dollars; third horse, fifteen dollars. Ten per cent entrance; four to enter. Weight not less than one hundred and forty pounds. Saddle horses are designated as horses that have never been trained or run in public.

Name of Horse.	By Whom Entered.	P. O. Address.
John	Henry Klempf	
———	B. W. Cavanaugh	
Prince	Fred. Bridge	
Frank	O. C. Jackson	
Nellie Woods	J. L. Zuver	

Position at Starting.	*Position at Close.*	
1. Frank	Frank	1
2. Prince	Prince	2
3. John	John	3
4. ———	———	4
5. Nellie Woods	Nellie Woods	5

Time—1:55.

RACE NO. 22—TROTTING.

Occident Stake. Foals of 1879. Mile heats in harness. Four hundred dollars added. First colt, cup and six tenths; second colt, three tenths; third colt, one tenth of stake.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Adrian, by Reliance; dam, by Kentucky Hunter	James M. Learned	Stockton
Brigade, by Brigadier; dam, American Maid	J. B. McDonald	Marysville
Arthurton, Jr., by Arthurton; dam, Camille	William Corbett	San Francisco
———, by Ironton; dam, Fannie Wickham	James Garland	San Francisco
Anteo, by Electioneer; dam, Columbine	J. C. Simpson	San Francisco
Nellie W., by Electioneer; dam, full sister to Aurora	A. Waldstein	San Francisco
Bonnie, by General Benton; dam, America	Palo Alto Stock Farm	San Mateo Co
Isma, by General Benton; dam, Irene	Palo Alto Stock Farm	San Mateo Co
Hattie Crocker, by Electioneer; dam, Melinche	Palo Alto Stock Farm	San Mateo Co
Bertha, by Electioneer; dam, American Girl	Palo Alto Stock Farm	San Mateo Co
Benefit, by General Benton; dam, Lucetta	Palo Alto Stock Farm	San Mateo Co
Wildflower, by Electioneer; dam, Mayflower	Palo Alto Stock Farm	San Mateo Co

Bertha——W. O.

No Time.

RACE NO. 24—TROTTING.

Special Trot, for named horses. Mile heats, three in five. Purse, six hundred dollars. First horse, three hundred and sixty dollars; second horse, one hundred and eighty dollars; third horse, sixty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Cairo, by Chieftain; dam, by Odd Fellow	John Hughes	San Francisco
Del Sur, by The Moor; dam, Gretchen	L. J. Rose	Los Angeles
Tump Winston, by Primus; dam, Lady Don	Eugene Mara	Carson, Nevada
Honesty, by Priam; dam, by Chieftain	J. H. Dodge	Stockton
Ashley, by Plumas; dam, by George	J. Cochran	Chico

Position at Starting.

1. Del Sur
2. Tump Winston
3. Cairo
4. Ashley
5. Honesty

Position at Close.

Cairo	3	1	1	2	1
Honesty	4	3	2	1	2
Del Sur	1	5	4	3	3
Ashley	2	4	3	4	4
Tump Winston	5	2	dis		

Time—2:25¼; 2:26¾; 2:28¼; 2:26½; 2:27.

REPORT OF RACES.

From the "Breeder and Sportsman."

FIRST DAY.

Never before in the history of the California State Agricultural Society was there a more auspicious opening. From the first there has been a good attendance, increasing as the week wore away, and the machinery running as smoothly as could be desired. The stock exhibition has been very fine, all the departments well filled, and when the conclusion comes it is safe to assert that the returns will show to the satisfaction of every one interested. The racing and trotting have been first class and with scarcely an exception every purse a contest to the end of the last heat.

THE RACES.

There could scarcely be a finer day for the races than the afternoon of Monday. There was no great degree of warmth, and yet there was caloric enough in the atmosphere to ensure the "sweating out" of the horses. There was a fine attendance for the opening day and a good deal of speculation. The first on the list was a dash of three quarters of a mile; the entries and conditions will be found in the summary. In the pool selling before the start Premium and Jim Renwick alternated as favorites, the rate being, fifty dollars on each of them, twenty dollars on Atalanta, and forty dollars on the others grouped in "the field." At the starting point it was difficult to tell the different horses unless by those who were posted about the "colors;" though there was only a short delay at the post—one false start—when the flag fell to a very good send-off excepting that Bob and Premium were slow in getting under motion. The leading horses for a time were Alalanta, Jim Renwick, and Jim Douglass, and it looked as if the race was going to be confined to a struggle between the trio, but "t' auld mare" came along with a rush, Ella Doane also improved her position, and though Jim Douglass essayed to get to the front it was not his day, Premium winning by an open length from Ella, Jim a fair third. The following is the

SUMMARY.

Agricultural Park Course, Sacramento, September 11.—Running—Introduction stake for all ages. Three quarters of a mile dash; $50 entrance; $15 forfeit; $200 added; second to save stake.

Cy. Mulkey names ch. m. Premium (10), by Carter; dam, Flying Cloud; 111 pounds	1
H. C. Judson names b. m. Ella Doane (aged), by Wildidle; dam, Nettie Brown, by Rifleman; 114 pounds	2
George Howson names b. s. Jim Douglass (4), by Wildidle; dam, by Norfolk; 108 pounds	3
C. Van Buren names P. Coutts' b. c. Forest King (3), by Monday; dam, Abbie W.; 95 pounds	0
G. W. Trahern names ch. f. Kate Carson (3), by Joe Daniels; dam, by Norfolk; 92 pounds	0
Wm. Boots names b. g. Bob (3), by Bob Wooding; dam, Gladiola, by Norfolk; 92 pounds	0
Theodore Winters names ch. f. Atalanta (3), by Norfolk; dam, Lady Jane; 92 pounds	0
Stemler & Ayres name ch. g. Jim Renwick (4), by Joe Hooker; dam, Big Gun; 105 pounds	0

Time—1:16.

The second race was the Breeders' stake for three-year-olds, a dash of a mile and a half, that closed with nineteen entries at fifty dollars entrance, play or pay, with three hundred dollars added money. Of these the only starters were John Windover's Captain Kidd, George Hearst's Maria F. and Duke of Monday, and the Palo Alto filly Precious. Mr. Hearst's pair were favorites in the pools, selling for one hundred dollars against seventy-five dollars for Precious, and ten dollars for Captain Kidd. The horses were promptly dispatched at the first trial, Maria F. starting off in the lead to make the pace hot for Precious, while the Duke was evidently biding his time. As they passed the wire for the first time Maria was leading by a length, with Captain Kidd third, and the Duke making up his lost ground rather too quickly it seemed for the length of distance he had to travel. At the half mile it was apparent that Maria F. and Captain Kidd had to succumb, for they resigned the lead to the Duke and Precious, who began a desperate brush that lasted to the drawgate, when the Duke, under the whip, swerved from the outside towards the inside rail, and the result was then never doubtful, as, although Duffy rallied the Duke, he was beaten by Precious in 2:38, Captain Kidd being a poor third, and Maria F. last.

SUMMARY.

AGRICULTURAL PARK COURSE, SACRAMENTO, September 11.—Running—Breeder's stake, for foals of 1879. One and a half mile dash; $50 entrance, p. p., $300 added. Closed March first with nineteen nominations.

Palo Alto Stock Farm names b. f. Precious, by Lever; dam, Frolic, by Thunder; 107 pounds	1
George Hearst names b. c. Duke of Monday; dam, Demirep, by Young Melbourne; 110 pounds	2
John Windover names b. c. Captain Kidd, by Leinster; dam, Tibbie Dunbar; 110 pounds	3
George Hearst names ch. f. Maria F., by Leinster; dam, Flush; 107 pounds	4

Time—2:38.

The third race was for a selling purse of three hundred dollars, heats of a mile for all ages, and there were nine entries, five of which came to the post. These were Joe Howell, Euchre, Inauguration, Patrol, and Vila Randlett. Joe Howell was largely the favorite in the pools, selling for one hundred dollars, Euchre bringing fifty dollars, fifteen dollars for the three others combined. Under the conditions Joe Howell had six pounds from the old schedule of weights under which the State Fair races were run. Inauguration and Patrol had their weight up, Vila Randlett five pounds off.

Owing to the refractoriness of Vila Randlett there was some trouble in getting them off, and when the flag fell she had a trifle the best of the start. Patrol soon joined her, and around the further turn all were in a bunch. It was a pretty race home, but at the drawgate "Old Joe" came away and won with apparently something in hand in 1:44. Euchre was second, Inauguration third, Vila Randlett fourth, and Patrol last.

The pool selling was at an end. The few sold showed Joe Howell such a favorite as to bring forty dollars for two dollars on all the others. The heat showed that the estimate of the old veteran was none too high, for although Inauguration led at the quarter and a half, proving himself a good colt, Joe was first in the stretch and first under the wire. The positions will be found in the

SUMMARY.

Agricultural Park Course, Sacramento, September 11.—Running—Selling race. Purse, $250, free for all. One mile and repeat; second horse to receive $75; entrance, five per cent, to third horse. Horses entered to be sold for $1,500 to carry entitled weight; one pound off for each $100 under fixed valuation.

Stemler & Ayres name b. g. Joe Howell (10), nine hundred dollars, by Bonnie Scotland; dam, Eva Shepherd, by imported Sovereign; 105 pounds	1	1
Wm. Boots names ch. c. Inauguration (3), fifteen hundred dollars, by Wildidle; dam, Miami; 95 pounds	3	2
J. T. Gilmer names ch. h. Euchre (5), six hundred dollars, by Leinster; dam, Flush; 105 pounds	2	4
W. L. Pritchard names g. m. Vila Randlett (4), one thousand dollars, by Waterford; dam, Little Sophie; 100 pounds	4	3
H. C. Judson names b. c. Patrol (3), fifteen hundred dollars, by Wildidle; dam, Nettie Brown, by Rifleman; 95 pounds	5	5

Time—1:44; 1:44.

The next race was the 2:40 trotting class, and of the eleven entries, six came to the front, viz.: Louis D., Manon, Vanderlynn, Rowdy Boy, Marin, and Big Lize. Manon was largely the favorite in the pools before the start, bringing sixty-eight dollars to eleven dollars for Vanderlynn, and twelve dollars for all the others. This was long odds for a five-year-old filly, at the outset of her career; and though the form she showed at Oakland appeared to justify the high estimate, the result proved that there was misfortune to mar the scheme.

The first heat there was a good deal of scoring. The starting judge had to impose several fines, in one instance five of the six drivers being mulcted. The eighth score brought them near enough together to tap the bell, Big Lize slightly in the lead, but at the half-mile pole Manon was first, with Rowdy Boy on her wheel. The gray obtained the advantage, and was first at the three-quarter pole, when he was passed by Manon, who won the heat in 2:25. The placing of the others will be found in the summary appended.

The second heat was startling to the backers of the favorite. Manon led at the start, but broke before rounding the turn, losing ground. At the half-mile the field was strung out with Rowdy Boy in the lead, though at the three-quarters Manon came up apparently the winner of the heat, but the judges penalized her for a run on the back-stretch, and gave the heat to Louis D., Big Lize placed second. Time, 2:24¾.

The third heat Louis D. took the lead with Rowdy Boy second at the half-mile. Rounding the further turn there was a change of places, a general mixing, which made it almost impossible to say what the positions were at this point, and the contest down the stretch was remarkably good. Louis D. amazed the spectators by coming to the score first, with Vanderlynn second, and the others as given in the summary. Time, 2:24¾.

The fourth and last heat was trotted when it was growing dusk, and patrols were appointed. Louis D. and Vanderlynn had a fight for precedence and before the quarter was reached Van's nose showed in front. At the half-mile Louis D. had much the best of it, a straggling field behind him. There was a closing up when the straight work was reached but not enough to jeopardize the chances of Louis D., who won in 2:25½, with Big Lize second. This gave huge Elizabeth the third money, Manon having made the second prize score in the first heat.

SUMMARY.

Agricultural Park Course, Sacramento, September 11.—No. 4—Trotting, 2:40 class. Purse, $1,000. Mile heats, 3 in 5.

Louis Duncan names b. g. Louis D., by King William, son of Whipple's Hambletonian; dam, unknown	4	1	1	1
W. H. Henderson names ——— Big Lize, by ———	6	2	5	2
C. Van Buren names P. Coutts' b. m. Manon, by Nutwood; dam, Addie	1	3	3	3
B. T. Miller names b. s. Marin, by Patchen; dam, unknown	3	4	4	6
P. Farrell names b. h. Vanderlynn, by Geo. M. Patchen; dam, a Joseph mare	5	6	2	4
James Garland names g. g. Rowdy Boy, by Rustic; dam, by Belmont	2	5	6	5

Time—2:25; 2:24¾; 2:24¾; 2:25½.

SECOND DAY.

There was an increased attendance at the track on Tuesday afternoon, the second day of the Fair, and everything went along smoothly. The President insisted that the drivers should wear distinctive colors, and though there were a few recalcitrants all had to comply, and the consequence was that the races were far more satisfactory to the public and enabled the reporters to follow the horses with more accuracy. This was a wise measure which should be followed by the other Fairs.

The first race called was the 2:25 class, for a purse of one thousand two hundred dollars, and of the nine entries only Ashley was withdrawn.

Director, owing to the Oakland showing, was made first choice at one hundred dollars against fifteen dollars for Starr King, twelve dollars for Crown Point, and twenty-five dollars for the field; composed of Captain Smith, Honesty, Del Sur, and Reliance, the latter proving himself excessively unreliable by getting distanced in the first heat. After ten false starts, they were sent off well together, and Starr King, driven in an able and determined manner by Tim Kennedy, made for the lead and broke at the first turn, and they almost all followed suit, so that Goldsmith was balked in his efforts to get through the scampering steeds. When they settled down to their work, Starr King was in the lead, with Honesty and Captain Smith in fair attendance; but at the upper turn Director was seen coming up, and he took the place of Honesty, who found the pace too hot for him, and so, after a very close and exciting finish, Starr King won by three quarters of a length, Captain Smith being a poor third. This heat in nowise decreased the faith held by his backers in Director's speed, and they backed him as fully as before. In the second heat Goldsmith was not caught napping, as he went at once to the front, and leading at the half by ten lengths, he won handily in 2:25½, with Starr King second, and Cairo a bad third. Crown Point was now withdrawn on account of lameness, and Director, with one hundred dollars to twenty dollars on his chances, cut out all the work in the two final heats, and won as he liked, Starr King being second, and Cairo next in the third heat, and Honesty second, and Del Sur third in the final heat, the time being 2:24 and 2:25.

SUMMARY.

Agricultural Park Course, Sacramento, September 12.—Trotting, 2:25 class. Purse, $1,200. Mile heats, 3 in 5.

J. A. Goldsmith names blk. h. Director, by Dictator; dam, by Mambrino Chief	2	1	1	1
C. W. Welby names ch. g. Starr King, by Geo. M. Patchen; dam, Mary Wonder	1	2	2	6
John Hughes names b. h. Cairo, by Chieftain; dam, by Odd Fellow	7	3	3	4
J. H. Dodge names ch. h. Honesty, by Priam; dam, by Chieftain	4	4	6	2
Palo Alto Stock Farm names br. g. Capt. Smith, by Locomotive; dam, Maid of Clay	3	6	4	5
L. J. Rose names blk. s. Del Sur, by The Moor; dam, Gretchen, by Mambrino Pilot	5	5	5	3
G. Valensin names ch. s. Crown Point, by Speculation; dam, Young Martha, by Patchen	6	7	dr	
James M. Learned names b. h. Reliance, by Alexander; dam, Rattler mare	dis			

Time—2:23½; 2:25½; 2:24; 2:25.

The next after the 2:25 trot was a purse of three hundred dollars, a dash of a mile, for yearlings, in which were entered Chevalier, by Charles Sherman, Mount Vernon, by M. E. Cloud, Rose Abbott, by Ben. E. Harris, the Sultan (Gertrude colt) by L. J. Rose, and the filly by Priam, the dam by Chieftain, by W. H. Parker. The youngsters were all pretty unruly except Mr. Rose's colt, who won by six lengths in 3:04½, while the others timed it a second less, the quarter being made in 49½ seconds, the half in 1:34¼, while the Priam filly came in second in 3:08, after making a very bad break when within reaching distance of home. It was a good performance, and Mr. Rose named the colt Edwin.

SUMMARY.

Agricultural Park Course, Sacramento, September 12.—Trotting. Purse, $300, for yearlings. Dash one mile, to rule.

L. J. Rose names b. c. ———	1
Charles Sherman names b. c. Chevalier	2
Ben. E. Harris names ch. f. Rose Abbott	3
J. A. McCloud names b. c. Mount Vernon	4
W. P. Parker names L. U. Shippee's c. f. ———	5

Time—3:04½.

Then came up for discussion the purse of five hundred dollars, mile and repeat, for two-year-olds, in which were entered Neluska, by Sultan, from Gretchen, owned by L. J. Rose; Ruby, by Sultan, dam by Hambletonian, belonging to John W. Mackay, and Pride, by Buccaneer, dam by Flaxtail, owned by M. W. Hicks. The little betting that took place was in favor of Ruby, and regrets were freely expressed that neither Flower Girl nor Sallie Benton, belonging to the Palo Alto farm, had put in an appearance to fill this engagement. There was an immense deal of scoring, as Dr. Hicks' filly was evidently out of condition through a long spell of epizoty, and could not score with her stronger opponents. Ruby started out in the first heat, and at the half-mile led Neluska by ten lengths, and won as she liked in 3:33. In the second heat Ruby was not on her best behavior, making three or four bad breaks, of which Neluska took advantage to get a good lead, and, although Goldsmith brought Ruby down the homestretch at a very fast gait, Neluska won by a head in 3:33. The final heat was very one sided, as Neluska was tired out, and Pride for the nonce had lost her former speed, so Ruby won easily in 2:34½, with Pride second, and Neluska last. For two-year-olds this was a great performance, and caused much favorable comment.

SUMMARY.

Agricultural Park Course, Sacramento, September 12.—Trotting. Purse, $500. Mile heats; for two-year-olds.

S. Rosener names J. W. Mackay's b. f. Ruby, by Sultan; dam, by Hambletonian	1	2	1
L. J. Rose names br. f. Neluska, by Sultan; dam, Gretchen	2	1	3
M. W. Hicks names b. f. Pride, by Buccaneer; dam, by Flaxtail	3	3	2

Time—2:33; 2:33; 2:34½.

THIRD DAY.

At the Park Wednesday morning, there being no parade of stock, the attendance was not so large as Tuesday, but the races drew as large a crowd as has been seen there for many a day. The feature of the exercises in the forenoon was a walking match for draft stallions for several prizes. The first prize was a farm wagon worth one hundred and fifty dollars. The second prize, twenty-five dollars, was offered by the Society. The rules required the carrying a ton, which was of grain, on light four-wheeled wagons. Honest John, owned by T. W. Williamson of Sacramento; Monarch, owned by H. W. Wilson of Nicolaus, and Conqueror, owned by C. Porter of Marysville, were entered. Monarch won the first prize, making the mile in 12:40½; Conqueror took the second prize.

THE RACES.

The third day again opened auspiciously. There was a fine attendance, and though the afternoon was warm (so warm as to make the visitors from the Bay divest themselves of all warm clothing, replacing it with linen), the horses started out well, and the racing was capital. Night Hawk astonished and pleased the spectators by making the fastest mile ever run on the Pacific Coast; and, as will be seen by the report, the race was a good one all through. Judge Shafter was warmly congratulated on having bred so good a mare, and the Haddington-Norfolk blood the happiest kind of nick.

P. A. Finigan was starter, and succeeded admirably in the trying position.

The first race was the filly stake for two-year-olds—a dash of five eighths of a mile; fifty dollars each; fifteen dollars forfeit, with two hundred dollars added. There were originally eight subscribers, but only two came to the post, George Howson's Augusta E. selling at sixty dollars against Mr. Coutts' Flou Flou at twenty dollars. There was seemingly no reason for this difference in the odds, because Flou Flou had shown great speed in her trials in the Spring, but afterwards she went amiss, and now has recovered somewhat of her old form. Flou Flou was out off, to make the running, but Augusta E. closed up and made an excellent effort on the homestretch, but she was beaten out by Flou Flou in 1:02½.

SUMMARY.

Agricultural Park Course, Sacramento, September 13.—No. 8, running—Two-year-old fillies. Five-eighths mile; $50 entrance, $15 forfeit, $200 added, second to receive $75, third $25.

C. Van Buren's blk. f. Flou Flou	1
George Howson's br. f. Augusta E.	2

Time—1:02½.

The second race was the California Derby Stake, for three-year-olds, a dash of a mile and a half, one hundred dollars entrance, twenty-five dollars forfeit, with two hundred and fifty dollars added; one hundred dollars to the second, and fifty dollars to the third horse. For this there came up only three contestants, Maria F. and the Duke of Monday belonging to George Hearst, and Captain Kidd, named by W. L. Pritchard. The betting was one hundred dollars to forty-five dollars on the Hearst stable, and when they were given the word Maria took up the running and passed the stand a length in advance of Captain Kidd, whose jockey was sawing the horse's head off in his attempt to keep him in reserve, but ineffectually, as the Captain was pumped out before he had gone a mile. Thus left to themselves, the two came rattling down the stretch and finished well in 2:40, the Duke taking the victor's spoils. Judge McKinstry was entered also in this race but did not start.

SUMMARY.

AGRICULTURAL PARK COURSE, SACRAMENTO, September 13.—No. 9, running—California Derby stake. Three-year-olds. One and a half mile dash; $100 entrance, $25 forfeit, $250 added, second horse $100, third $50.

Hearst's b. c. Duke of Monday	1
Hearst's ch. f. Maria F.	2
Pritchard's b. c. Captain Kidd	3

Time—2:40.

Next on the programme was the Jennie B. stake, a dash of a mile for all ages, fifty dollars entrance, fifteen dollars forfeit, with two hundred dollars added. In this there were Red Boy, a great favorite in the betting, Night Hawk, May D., Forest King, and Frank Rhoads. On the fall of the flag both Red Boy and Night Hawk, who were on the outside position, made a rush for the pole, and at too close proximity for safety, but luckily a collision was avoided, and they both began to race at a clipping gait, Night Hawk always having slightly the advantage of Red Boy, and holding her position, she shook off Red Boy's desperate challenge at the drawgate and won in 1:42¼, the fastest time made on the coast, and, as it beat Jennie B.'s record in this race, 1:42¾, it will hereafter be named the Black Hawk Stake until her time is beaten.

SUMMARY.

AGRICULTURAL PARK COURSE, SACRAMENTO, September 13.—Jennie B. stake—Running—For all ages. Dash of one mile; $50 entrance; $15 forfeit; $200 added; second horse, $75; third horse, $25. Stake to be named after the winner if Jennie B.'s time, 1:42¾, is beaten.

Night Hawk, b. m.	1
Red Boy, b. h.	2
May D., ch. m.	3
Forest King, b. c.	4
Frank Rhoads, b. s.	5

Time—1:42¼.

The next race was the selling race, a dash of a mile and an eighth for a purse of two hundred and fifty dollars; one hundred dollars to second horse, and five per cent of the purse to the third. Horses entered to be sold for one thousand dollars to carry usual weight, and two pounds off for every one hundred dollars under that valuation. In this race there were only three entries, Joe Howell, aged, entered to be sold at eight hundred dollars, selling in the pools at one hundred dollars against twenty dollars for Joe Daniels, Jr., aged, at two hundred and fifty dollars, and Lady Partisan, three years old, for one thousand dollars, both in the field. At the end of half a mile Joe Howell held them both safe and cantered home in 2:00½, Joe Daniels taking second, and Lady Partisan third money.

SUMMARY.

Agricultural Park Course, Sacramento, September 13.—Running—One and one eighth mile, selling race. Purse, $250; second horse, $100; entrance (5 per cent) to third horse. Two pounds off for each $100 under fixed valuation. Horses to be sold for $1,000 to carry entitled weight.

Joe Howell, b. g.	1
Joe Daniels, Jr., ch. g.	2
Lady Partisan, b. f.	3

Time—2:00½.

The last race was for the 2:30 class, and as it had been fully shown that Sweetness was the fastest of all those entered, although it was doubted whether she could stay, she was eagerly sought after at one hundred dollars, while Nellie R. brought forty dollars, and the field sixty dollars, in which were Albert W., Manon, and Tump Winston. Albert W. and Nellie both went to the front in this heat with Sweetness, but the former was rank, and Nelly broke badly at the backstretch, and as Sweetness appears to be steadiness itself, she won, after a slashing finish with Albert W., in 2:24, Nellie R. being third, and Winston last. As Albert W. had shown so well in this heat, and as Charley Marvin was given charge of Nellie R., the hopes of the fielders revived, and against ninety dollars for Sweetness, Albert W. brought forty-five dollars, Nellie R. thirty-five dollars, and the field twenty dollars.

The next was a finely trotted heat, as when, in the backstretch, opposite the grand stand, Sweetness, hard pressed, was only a short length ahead of Nellie R., she leading Albert W. by half that distance. They all three came down the homestretch in beautiful style, but close at the drawgate Nellie could not stand the strain, and was off her feet, and Sweetness outtrotted Albert W. by a length, amid a great deal of excitement and applause; the time being 2:21¼.

The fielders kept up a brave mien, and wagered freely on even terms that Sweetness would not win the race, counting that if she could only be beaten one heat, her chances would be at an end. Sweetness again cut out the pace, and soon opened a gap of two lengths, and although in the upper turn Albert W. and Nellie R. closed on her, she maintained her position to the end, winning by a length from her, in 2:22½. Albert W. took the second and Nellie the third money, and this well contested race brought the day's proceedings to a close.

SUMMARY.

Agricultural Park Course, Sacramento, September 13.—No. 12, Trotting—2:30 class. Mile heats; three in five. *Purse, $1,200; first horse, $720; second, $360; third, $120.*

Sweetness, b. m.	1	1	1
Albert W., b. h.	2	2	4
Manon, b. m.	4	3	3
Nellie R., ch. m.	3	4	2
Tump Winston, ch. g.	5	5	5

Time—2:24; 2:21¼; 2:22½.

FOURTH DAY.

One of the old-time rousing crowds were on hand to witness the races Thursday afternoon. The hot north wind was met by the breeze which had come through the Golden Gate and following the valley northward routed the unwelcome visitor. There is great relief when the red-mouthed demon of the north is exorcised, and his place taken by the sweet breath of the Pacific.

Notwithstanding the room on the stands, they were densely packed, every seat occupied, and the ground for carriages was completely filled. Hundreds were congregated between the stands and the quarter-stretch, and altogether the concourse was probably as large as has ever been seen at Agricultural Park. The management continues to give complete satisfaction, all the officers being complimented, and the Secretary, who has been untiring in his efforts from the close of the last Fair until the present time, was heartily applauded for his zeal and official labor.

The first race on the programme was the 2:22; the entries, Brigadier, Romero, and Belle Echo. With the knowledge that Romero had not recovered from a severe attack of pinkeye, which threw him out of training so far as giving him fast work went, and even if he had not been subjected to the weakening effect of the disease, the break in his work was sufficient to incapacitate him for making a bruising race. Under the circumstances he made a fine performance, as 2:20 is the fastest heat trotted in California this year, and is the fastest time ever made by a California bred stallion.

The betting immediately before the start was seventy dollars on Romero, fifty dollars on Brigadier, and fifteen dollars on Belle Echo.

For the first heat little time was wasted in scoring, as at the third attempt a good start was given.

At the outset Romero took advantage of his position at the pole, and at the quarter he was well to the fore, leading Brigadier by four lengths, he being half that distance ahead of the mare. Shortly afterwards Brigadier made a bad break and lost so much ground that his driver probably thought he had no chance of winning the heat, so he reserved his horse for future operations. In the meantime Belle Echo had closed up toward the leader, who passed the half-mile post in 1:10½, and thence they came around the upper turn, but Belle Echo could never get within more than a length of Romero, and when at the drawgate she was driven to her utmost, she wobbled for a moment and then was off her feet, and Romero jogged past the wire in 2:22½, with Belle Echo second and Brigadier last.

The second heat was of a far more lively character, and this time Brigadier was shaken up to his work, and he was almost lapped with Romero when the latter reached the half-mile in the fast time of 1:08, and Romero trotting very squarely finished the heat in 2:20 by three lengths from Brigadier, the mare making a poor third. The announcement of the time was received by the public with applause, but his backers were less confident about his being able to repeat any such time.

The betting after this heat was one hundred dollars on Romero to forty dollars on the other two. The start for the third heat was not long delayed. Romero again started off in the lead, but Brigadier this time would not allow him to open any gap, and moving up he reached Romero's flank; but the latter, under the pressure, resumed the lead by a length, and so they traveled to the half-mile post in 1:10, and all around the upper turn Brigadier seemed to improve his position inch by inch, and on entering the homestretch Brigadier was lapping the leader, and thence they came like a double team, until at the drawbridge Goldsmith was seen urging his horse to the utmost, and under the pressure he broke, and amid the wildest excitement the crowd congregated at that point breaking into the open course with yells of delight, Brigadier came away and won the heat in 2:23.

Previous to the fourth heat betting was very heavy, and indeed it was constantly chopping all through the race. After Romero's winning the first two heats, those who had backed Brigadier hedged their bets, and now the Romero party were following suit, they paying one hundred and fifty dollars for Brigadier against eighty dollars for Romero, and a great many backed Belle Echo up to seventy dollars, so as to stand even or suffer a small loss, the pool box being probably the largest winner through its commissions. In this heat Brigadier went ahead, accompanied by Belle Echo, while Romero played a waiting game; but when on the upper turn the mare broke badly. Goldsmith brought up Romero at his utmost speed, but he could not reach the leader; he winning by four lengths in 2:28½.

The fifth heat was something of a surprise. The betting ruled ninety dollars on Brigadier to twenty dollars on the other two, and again a good start was given. At the half-mile post Brigadier was just lapped by the two others, but Brigadier around the upper turn gradually drew away from them and seemed to be winning handily, when Mr. Titus brought Belle Echo up with a tremendous rush of speed, and secured a dead heat in 2:27¼, with Romero last.

In the sixth heat Brigadier appeared to be the freshest and the odds were fifty dollars to twenty dollars in his favor. He set out at a brisker pace on the next heat and kept Belle Echo just at his wheel, and trotting evenly down the homestretch it looked almost like a second dead heat, when at the drawgate Belle left her feet, and Brigadier won the heat and race by four lengths in 2:25½ from Belle Echo, Romero following her at a like distance.

SUMMARY.

Agricultural Park Course, Sacramento, September 14.--Trotting, 2:22 class. Purse, $1,200. Mile heats, 3 in 5.

J. B. McDonald's b. s. Brigadier	3	2	1	1	0	1
J. A. Goldsmith's g. s. Romero	1	1	2	2	3	3
L. H. Titus's b. m. Belle Echo	2	3	3	3	0	2

Time—2:22½; 2:20; 2:23; 2:28½; 2:27¼; 2:25½.

THE PACING RACE.

In the pacing race, Corette was largely the favorite with the betters, and though she took the first heat, from being set back for a running break the judges awarded the heat to Ouida. There was no change in the betting. The placing of each of the heats will be found in the annexed

SUMMARY.

Agricultural Park Course, Sacramento, September 14.—Pacing, 2:25 class. Purse, $500. Mile heats, 3 in 5.

L. E. Yates' b. m. Corette	4	1	1	1
G. Valensin's br. m. Ouida	1	4	3	2
E. S. Dennison's ch. m. Lady Hays	2	2	4	4
A. L. Hinds' ch. h. Oakland Boy	3	3	2	3

Time—2:24; 2:23¼; 2:25; 2:27.

THE TWO-MILE RACE.

Vanderlynn was greatly the favorite in the heat of two miles, San Mateo Belle and Slim Jim the only starters against him. The odds in his favor were sixty dollars to twenty dollars, and he won very handily.

SUMMARY.

Agricultural Park Course, Sacramento, September 14.—Trotting—Two miles and repeat, 2:40 horses. Purse, $800.

P. Farrell's b. h. Vanderlynn	1	1
W. Z. Price's b. m. San Mateo Belle	2	2
C. H. Shearer's blk. g. Slim Jim	3	dis

Time—5:03¼; 5:07.

FIFTH DAY.

The card for Friday was composed of four running races, the first of which was the colt and filly stake, a dash of a mile for two-year-olds, fifty dollars entrance, fifteen dollars forfeit, with two hundred dollars added. There were ten original entries, but only three sported silk. May B. running highest in the pools at fifty dollars against thirty-five dollars for Flou Flou, and five dollars for Certiorari. Among the principal absentees were Satanella, of the Palo Alto stable; Lou Spencer, belonging to Mr. Winters, and Panama, owned by Mr. Coutts. It was an easy task for Mr. Finigan, who acted as starter, to get them off pretty well together, and May B. at once shot to the front, with Flou Flou held readily within reaching distance, and thus they traveled well around the upper turn when Flou Flou gradually moved up, and challenging May B. at the distance, won a beautifully contested race by a short head in 1:46¼, Certiorari being a poor third.

SUMMARY.

Agricultural Park Course, Sacramento, September 15.—Colt and filly stake; for two-year-olds. Dash of one mile; $50 entrance; $15 forfeit; $200 added; second horse, $50; third, $25. Ten entries, of which seven pay forfeit.

C. Van Buren names P. Coutts' blk. f. Flou Flou, by Monday; dam, Jennie C.; 97 pounds	1
Put. Robson names ch. f. May B., by Shannon; dam, Jessie R.; 97 pounds	2
G. W. Trahern names ch. g. Certiorari, by Joe Daniels; dam, by Norfolk; 97 pounds	3

Time—1:46¼.

The next was a selling race for all ages, a dash of a mile and a quarter, in which Ella Doane was privately announced as a sure thing, and consequently she fetched the highest price at about twenty-five dollars against forty dollars for the field, in which were

Haddington, Vila Randlett, Euchre, and Sister to Lottery. The race was entirely between Ella Doane and Haddington, both carrying nearly even weights. At the drop of the flag Haddington moved briskly to the front, and at the end of half a mile was fully five lengths ahead of Ella, and going so easily that it looked as if the favorite was destined to be bowled over for the second time in the day; but down the backstretch and around the straight, Ella, Euchre, and Vila moved closer up, and at the drawgate they were all whipping save Ella, and she out-stayed them all, winning in a handy manner in 2:10¾, Haddington a good second, and Vila Randlett a fair third.

SUMMARY.

AGRICULTURAL PARK COURSE, SACRAMENTO, September 15.—Selling race. Purse, $30; for all ages. Dash of one and a quarter mile; $100 to second horse; entrance, five per cent, to third; horses entered to be sold for $1,500 carry full weight; for $1,200, three pounds off; for $1,000, five pounds off; for $750, seven pounds off; for $500, ten pounds off. Twelve entries, of which seven declared out.

H. C. Judson names b. m. (aged) Ella Doane ($1,200), by Wildidle; dam, Nettie Brown; 108 pounds	1
P. J. Shafter names b. h. (5) Haddington (1,000), by imported Haddington; dam, by Norfolk; 109 pounds	2
W. L. Pritchard names b. f. (4) Vila Randlett ($1,000), by Waterford; dam, Little Sophie; 100 pounds	3
H. Schwartz names b. f. (3) Sister to Lottery ($500), by Monday; dam, Virginia; 82 pounds	0
J. T. Gilmer names ch. h. (5) Euchre ($600), by Leinster; dam, Flush; 107 pounds	0

Time—2:10¾.

For the next race there were great expectations, it being a post stake—a dash of three miles; one hundred dollars entrance, with five hundred dollars added; weight, one hundred pounds, save for three-year-olds, they to carry ninety pounds. There were six entries, viz.: W. Boots, Palo Alto Stock Farm, W. L. Pritchard, George Hearst, J. T. Gilmer, and Stemler & Ayres. Now from this list it appeared as if Precious, Jim Brown, Red Boy, and Fred Collier would all be started for this valuable stake; but the lovers of a well contested race were doomed to disappointment, as when the nominations closed on the Wednesday evening it was found that there were only three: Wm. Boots naming Mollie H.; W. L. Pritchard, Capt Kidd, and Stemler & Ayres, Fred Collier. This race seemed almost a walk-over for Fred Collier, and odds were freely laid at one hundred dollars to fifteen dollars in his favor; but as a miniature simoon broke over the track just before the horses were called to the post, the quotations became rapidly reduced, and twenty dollars to twenty-five dollars could be obtained on the field against eighty dollars for Fred. There were several reasons adduced for the change; one being that Fred Collier had not quite recovered from his sickness, and that he would find it hard to go the distance at any kind of a good pace. Then there were some dark hints thrown out that Captain Kidd was a far better horse than he was given credit for, and that if he could be controlled he would give a good account of himself; but this he disproved immediately he arrived at the post, as at the first false start he broke away and galloped nearly half a mile before he was got under control. Again the wind came whirling the sand up in countless eddies, and in such masses that sad havoc was played with the costumes of the ladies and children who crowded the grand stand, and at times the clouds of dust were so dense that no view could be obtained of the track on the opposite and upper turns—a strong presage of an approaching heavy rain storm. The race requires but very little description. Captain Kidd, apparently overpowering his jockey, rushed off at a terrible pace, and when he finished the first mile, in 1:45½, with Fred and Mollie respectively twenty and twenty-five lengths behind, it was evident he could not keep up the pace, as already he showed signs of distress. Shortly after passing the grand stand the Captain began falling back, and on the mid back stretch Fred Collier assumed the lead amid great applause, and at the completion of the second mile, in 3:38, he led Kidd by thirty lengths, and soon after the latter fell back to the rear division; but Mollie H. had no chance whatever to close the gap between her and the leader, and Fred won, in 5:40, by a couple of hundred yards, with Captain Kidd beaten off.

SUMMARY.

AGRICULTURAL PARK COURSE, SACRAMENTO, September 15.—Post stake. Dash of three miles. Free for all. $100 entrance; $500 added; weight, 100 pounds; three-year-olds, 90 pounds; second horse to receive $150; third, $100. Starters to be named to the Secretary Wednesday evening, at or before 8 o'clock, the subscribers being Wm. Boots, Palo Alto Stock Farm, W. L. Pritchard, George Hearst, J. T. Gilmer, and Stemler & Ayres.

Stemler & Ayres name ch. g. Fred Collier, 4 years, by Joe Hooker; dam, Puss, by Norfolk	1
Wm. Boots names b. m. Mollie H., 5 years, by Wildidle; dam, Mamie Hall, by Norfolk	2
W. L. Pritchard names b. c. Captain Kidd, 3 years, by Leinster; dam, Tibbie Dunbar	3

Time—5:40.

The fourth race was a consolation purse of two hundred and fifty dollars for beaten horses; entrance free; a mile and repeat; in which were nominated Maria F., Atalanta, May D., and Jim Douglass; the entries being made immediately before the running of the post stake. As the meeting was drawing to a close in a betting point of view there was a general scramble among the talent either to make up their losses or to increase their little hoard in this race, and betting was consequently very heavy while the mutual pools were, as in all running races, totally inadequate to the demand. Curious to relate, May D. was made first choice, probably on a favorable answer to some private trial; but public form was far from being ignored, and Maria F. and Atalanta both had enthusiastic supporters, while the fine running of Jim Douglass last year was not forgotten.

It was now 4:30; the sky again grew dark; clouds of dust, raised by contesting winds blowing from all quarters apparently, swept up and down the track, and filled the air so that one could not see a distance of fifty yards. Hats were blown across the paddock, light wraps wafted aloft, parasols reversed, plumes disarranged, bonnets crushed in, horse-nets torn off or turned over the animals' heads, the cards on the judges' bulletin board torn down, and all sorts of light damage done. The people enjoyed the scene immensely, and cheered loudly every unlucky pedestrian who went scudding after his fleeing hat. Presently thunder was heard; sheet and forked lightning flashed athwart the lowering sky; and just as the Consolation race was called, down came the rain. Then there was one of the liveliest and most amusing scenes witnessed that has been recorded. Twelve hundred people in the paddock and on the course broke for cover, while the seven thousand under shelter poked all sorts of fun at them, and gave them sonorous and gratuitous advice how to dodge between the drops and pick themselves out of the sloppy mud of the track, that developed in ten seconds after the down-pour began. For the next half hour, between the laughter of one side and the chagrin of the other, the storm, mud, thunder and lightning, the dripping jockeys and the drenched pedestrians, there was merriment and entertainment enough to satisfy the most laughter-loving mortal ever born. The race was sent off in the midst of the rain, and part of it was run in mud hoof deep. The jockeys came in so covered with mud, and their faces so plastered with mother earth, that it was difficult to recognize them, while their silk and satin uniforms were fairly ruined. It was their own desire to run the race, despite the storm, for at one time the Board of Judges were on the point of ordering the race postponed.

As may be supposed there was not so much trouble sending the horses off as there was to get the jockeys out from the eaves that gave them shelter from the drenching rain. At the first trial they were dispatched to a somewhat straggling start, Atalanta forcing the pace at a furious rate, and at every stride bespattering May D. and Maria F., who were striving to get up with her, but in vain, as she finished first in 1:44¼, two lengths ahead of May D., with Jim Douglass a fair third. This was considered very fast time by those who had not had experience on the Eastern race courses, where it is known that when the rain has not the time to soak into the second and hard coating, the track is not made much heavier by a strong rain storm, as the effects are felt much more on the succeeding day. Atalanta now became the best choice, but there were a great many who freely backed Maria F., as she had shown rough but good honest form all through the season, while the other two met with only lukewarm support. In the second heat Jim Douglass at first made the running, and at the half-mile post he just lead the three others all bunched, but he could no longer keep the pace, and resigned the first position to May D., who, as they rattled down the homestretch, looked a winner, but Maria F. gradually overhauled her and beat her out in 1:47, with Atalanta a good third. There was now a great deal of betting on the final heat, Maria F. selling for sixty dollars against ten dollars for May D., and twenty-five dollars for the other two combined. A prettier finale was never seen on a race course, Atalanta running up to Maria F. for the lead, and never being able to get more than the shortest of necks ahead, and thus at the height of their speed they went around locked together as a team, and as they entered the homestretch Atalanta was seen to give way a little, and an excited trainer offered one hundred dollars to ten dollars that she was beaten, that was quickly taken up by one of the directors of the Blood Horse Association, and it looked as if the long odds were lost, as Atalanta, with great gameness, came again, but amid yells and applause, whipping and spurring, Maria F. headed the race in 1:47 by the shortest of heads, the general belief being that the two fillies were so evenly matched that if Maria F. had held the outside position the result would have been reversed.

SUMMARY.

Agricultural Park Course, Sacramento, September 15.—Consolation purse, $250, for beaten horses. One mile and repeat; entrance, free; second horse to receive $50.

George Hearst names ch. f. Maria F., by Leinster; dam, Flush, 3 years; 92 pounds	4	1	1
Theodore Winters names ch. f. Atalanta, by Norfolk; dam, Lady Jane; 92 pounds	1	3	2
H. C. Judson names ch. m. May D., 4 years, by Wildidle; dam, Nettie Brown, by Rifleman; 105 pounds	2	2	3
George Howson names b. s. Jim Douglass, 4 years, by Wildidle; dam, by Norfolk, 108 pounds	3	4	4

Time—1:44½; 1:47; 1:47.

SIXTH DAY.

Through reasons over which the Society had no control, the final day of the meeting did not possess those attractions that in some years caused the receipts at the Park to equal if not to exceed those of any previous day of the meeting. The first on the card was a double team race for a purse of eight hundred dollars for the 2:40 class, which fell through by reason of ailments in one horse in each team. Then the purse for the 2:19 class failed to fill, and to take its place the Directors offered a purse for runners of three hundred and fifty dollars, for a mile and repeat race. That was the first one on the card, and included in the entries were Night Hawk, Howell, and Frank Rhoads; Maria F. being withdrawn after her punishing race of the previous day. To use a very common but expressive word, there seemed to be a little "shenanagin" going on in regard to the betting in this race. On the evening before, there was some rivalry for first position between Howell and Night Hawk, the former selling at last as first favorite at fifty dollars to forty dollars, with five to Frank Rhoads. In the morning there was a good deal of useless cackle indulged in as to a rider being got at to throw a heat and other nonsense that induced Mr. Shafter to give the mount on Night Hawk to Howson, a resolution that in the way of results was lamentable indeed, as the mare is very difficult to manage, and as she was already somewhat sore and ill tempered, it is not astonishing that she could not run anywhere up to her previous bright record and consequently was beaten. But nevertheless Night Hawk was made a great favorite in the pools, selling for one hundred dollars against sixty-five dollars for Howell and ten dollars for Frank Rhoads. The mare was terribly fractious, greatly delaying the start, but when the flag was dropped Frank rushed for the lead and held it for nearly half a mile, and at that point the three were all on even terms, but on the homestretch Howell came away and won handily in 1:43½, Night Hawk a fair second. In the second and final heat Howell was a great favorite, and he had a slight advantage under a pull all the way round, and although Night Hawk made a desperate finish under whip and spur, Howell took the race easily in 1:45.

SUMMARY.

AGRICULTURAL PARK COURSE, SACRAMENTO, September 16.—Purse of $350. The second horse to receive the entries, five per cent of the purse, and the third horse, $50. A mile and repeat.

Stemler & Ayres name b. g. Joe Howell, aged, by Bonnie Scotland; dam, Eva Sheppard, by imported Sovereign, 111 pounds	1	1
P. J. Shafter names b. m. Night Hawk, five years, by imported Haddington; dam, by Norfolk, 111 pounds	2	2
W. H. Pritchard names b. s. Frank Rhoads, four years, by Leinster; dam, Addie A., 103 pounds	3	3

Time—1:43½; 1:45.

The next race for decision was the famous Occident Stake, in which of all the original entries only five made their third payments, and as they have all suffered more or less from the epizooty, there was but one that made her appearance, and that was Bertha of the Palo Alto stable, and she walked over for the stakes and piece of plate presented by the Association.

SUMMARY.

AGRICULTURAL PARK COURSE, SACRAMENTO, September 16.—Occident stake for 1882, closed in 1881, and the third payments have been made on the following:

Leland Stanford names b. f. Bertha, by Electioneer; dam, American Girl, by Toronto Sontag	1
James M. Learned names b. c. Adrian, by Reliance; dam, by Kentucky Hunter	pd. ft
J. C. Simpson names b. c. Anteeo, by Electioneer; dam, Columbine, by A. W. Richmond	pd. ft
H. Walstein names b. f. Nellie W., by Electioneer; dam, full sister to Aurora, by John Nelson	pd. ft
Leland Stanford names b. c. Benefit, by Gen. Benton; dam, Lucetta, by Rysdyk's Hambletonian	pd. ft

Next on the card was a race for gentlemen's saddle horses in which professional riders were barred. The entries were Prince, Truant, Nellie Woods, John, and a chestnut horse without a name. At the drop of the flag the running was made by the two latter, but before they reached the half-mile they were both pumped out, and John took the lead, while Truant was gently held in reserve, and when, while well in the homestretch, he was let loose; he won with something to spare in 1:55, with Prince second two lengths ahead of John, and Nellie Woods pulling up far in the rear. The race was well ridden on the winning and second horses.

SUMMARY.

AGRICULTURAL PARK COURSE, SACRAMENTO, September 16.—Gentlemen's saddle horse race. Purse, $100. Weight, not less than 140 pounds. Professional riders barred.

O. C. Jackson names ch. h. Truant	1
Fred. Bridge names ch. h. Prince	2
Henry Clemp names b. h. John	3
B. W. Cavanaugh names ch. h.——	4
J. L. Zuver names ch. m. Nellie Woods	5

Time—1:55.

It had been announced that Wildflower would trot against her record of 2:21, but she in turn was suffering from the prevailing complaint, and she was merely shown in the track, where her fine and graceful form elicited many favorable comments.

The last was an arranged race for a purse of six hundred dollars, in which Honesty was whooped up into the first position, and until the contest was at an end he was almost always the favorite, and his sanguine backers realized that Honesty is not always "the best policy." He sold for eighty dollars against twenty-five dollars for Ashley, and a like amount for the field, in which were Cairo, Del Sur, and Tump Winston. Why Ashley should sell over Cairo as second favorite was a conundrum no one could understand, and before the race was over many regretted that they had not followed the British example and taken Cairo. The first heat was all between Del Sur and Ashley, and the former beat the latter out by a length in 2:25¾, and at double that length came Cairo, and then the favorite, with Winston last. In the second heat Del Sur again made the pace, but with a bad break he resigned the position to Ashley, who in turn was lapped at the half mile, and then passed by Cairo, who finished a pretty heat first in 2:26¾, two lengths ahead of Tump Winston, with Honesty a fair third. At last the field became first choice at fifty dollars, but there was seemingly no desire among the backers of Honesty to hedge their investments, as he sold for thirty-five dollars and Ashley for eight dollars. In this heat Del Sur was left on a run, and Ashley passed Cairo at the quarter, as he was indulging in the same jumping, but

Cairo soon resumed the advantage, and although Honesty this time made an effort to come up, Cairo beat him out by two lengths in 2:28¼, Ashley being a poor third and Tump Winston distanced. Now there was some lively betting, the field bringing one hundred and twenty dollars, forty dollars for Honesty and ten dollars for Ashley, and when his backers were abandoning his chances, Honesty took it into his head to make a rattling good heat, for although both Cairo and Ashley were ahead of him at the half-mile, he was even with them on the homestretch, and, after a handsome tussle, Honesty won, in 2:26½, by a short head from Cairo, Del Sur being third. Honesty was again installed first choice at fifty dollars against forty dollars for the field, but this time Cairo gave a good proof of his endurance, for he waltzed away from his opponents, and won in 2:27, by seven open lengths from Honesty, Del Sur being a poor third; and this brought the week's meeting to a rather tame conclusion.

SUMMARY.

Agricultural Park Course, Sacramento, September 16.—Purse, $600, for arranged entries, divided at the same rates as in all the other purses: sixty per cent to the first horse, thirty per cent to the second horse, and ten per cent to the third horse.

John Hughes names ch. h. Cairo, by Chieftain; dam, unknown	3	1	1	2	1
J. H. Dodge names ch. h. Honesty, by Priam; dam, by Chieftain	4	3	2	1	2
L. J. Rose enters blk. s. Del Sur, by The Moor; dam, Gretchen	1	5	4	3	3
Jackson Cochran names ch. g. Ashley, by Plumas; dam, by George	2	4	3	4	4
Eugene Mara names ch. g. Tump Winston, by Primus; dam, Lady Don	5	2	dis.		

Time—2:25¼; 2:26¾; 2:28¼; 2:26½; 2:27.

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Premium.
CLASS I—THOROUGHBRED HORSES—STALLIONS.				
Best four years old and over	George Hearst	San Francisco	Jim Brown	$40 00
Second best four years old and over	Wm. Boots	Milpitas	Nathan Coombs	20 00
Best three years old				
Second best three years old				
Best two years old	W. L. Pritchard	Sacramento	Berrian	15 00
Second best two years old				
MARES.				
Best four years old and over	Wm. Boots	Milpitas	Mollie H.	22 50
Second best four years old and over				
Best three years old				
Second best three years old				
Best two years old	J. B. Haggin	San Francisco	Irene	11 25
Second best two years old				
Best one year old	J. B. Haggin	San Francisco	School Girl	7 50
Second best one year old				
FAMILIES NOT THOROUGHBRED.				
Stallion and five colts	S. S. Drake	Vallejo	Admiral and ten colts	37 50
Dam and two colts	Wm. Bandeen	Hicksville	Dollie and two colts	30 00
CLASS II—HORSES OF ALL WORK—STALLIONS.				
Best four years old and over	J. B. Haggin	San Francisco	Admiral	40 00
Second best four years old and over	A. Belina	Haywards	Gen. Grant, Jr.	20 00
Best three years old	J. Rassett	Elk Grove	John	30 00

First Department—Continued.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Premium.
Second best three years old	Wm. McClellan	Madison	Prince	$15 00
Best two years old	J. Rassett	Elk Grove	Prince	20 00
Second best two years old	P. J. Shafter	Olema	Black Prince	10 00
Best one year old	G. W. Horn	Sutter Creek	Major Nelson	15 00
Second best one year old	A. Belina	Haywards	Frank	7 50
Best under one year old	A. Belina	Haywards	Butt Cut	7 50
Second best under one year old				
MARES.				
Best four years old and over	E. Comstock	Sacramento	Coalie	40 00
Second best four years old and over	S. S. Drake	Vallejo	Eve	20 00
Best four years old and over, with colt	M. Wick	Oroville	Fly and colt	22 50
Best two years old	S. S. Drake	Vallejo	Mary	11 25
Best one year old	B. E. Harris	San Francisco	Abbottine	10 00
Second best one year old	R. Brown	Brighton	Fannie	5 00
Best suckling colt	E. Comstock	Sacramento	Lena	7 50
Second best suckling colt				
CLASS III—DRAFT HORSES—STALLIONS.				
Best four years old and over	T. Skillman	Petaluma	Tornado	40 00
Second best four years old and over	J. B. Haggin	San Francisco	Black Prince	20 00
Best three years old	R. J. Merkley	Sacramento	Normandy 2d	30 00
Second best three years old	A. J. Pierce	Petaluma	Charlemagne	15 00
Best two years old	T. Skillman	Petaluma	Monarch	20 00
Second best two years old	E. Comstock	Sacramento	Billie	10 00
Best one year old	R. J. Currey	Dixon	Nimbus	11 25
Second best one year old				
Best under one year old	R. J. Currey	Dixon	Gray Chief	10 00
Second best under one year old	E. Comstock	Sacramento	Maje	5 00
MARES.				
Best four years old and over, with colt	R. J. Merkley	Sacramento	Nellie and colt	40 00
Second best four years old and over, with colt	R. J. Currey	Dixon	Mag and colt	20 00
Best four years old and over	C. Thodt	Dixon	Fannie	30 00
Second best four years old and over	E. Comstock	Sacramento	Maud	15 00
Best three years old	C. Thodt	Dixon	Lucy	22 50
Best two years old	R. J. Merkley	Sacramento	Fanchon	11 25

Best one year old	T. Skillman	Petaluma	Gertrude	$7 50
Best suckling colt	R. J. Merkley	Sacramento	Juanita	10 00
Second best suckling colt	A. H. Thomassen	Routier's Stat'n	Jennie	5 00
CLASS IV—ROADSTERS—STALLIONS.				
Best four years old and over	P. J. Shafter	Olema	Rustic	40 00
Second best four years old and over	J. B. Haggin	San Francisco	Zulu Chief	20 00
Best three years old	M. W. Hicks	Florin	Starling	30 00
Second best three years old				
Best two years old	M. W. Hicks	Florin	Privateer	20 00
Second best two years old	Wm. Ingram	Lemoore	Almoore	10 00
Best one year old	J. C. Hasty	Chico	California Chief	15 00
Second best one year old	A. L. Frost	Sacramento	Roscoe	7 50
Best suckling colt	R. H. Newton	Woodland	Del Sur, Jr.	10 00
Second best suckling colt	B. F. True	Chico	Ben T.	5 00
MARES.				
Best four years old and over	W. J. O'Brien	Sacramento	Maggie A.	40 00
Second best four years old and over	J. M. Learned	Stockton	Allie Ray	20 00
Best three years old	J. B. McDonald	Marysville	Hazel Kirke	30 00
Second best three years old	S. Tutt	Cottonwood	Turtilotte	15 00
Best two years old	J. B. Haggin	San Francisco	Lady Gray	20 00
Second best two years old	J. B. McDonald	Marysville	Yuba Maid	10 00
Best one year old	M. W. Hicks	Florin	Clara	10 00
Second best one year old	M. W. Hicks	Florin	Cora	5 00
Best suckling colt	Geo. W. Hancock	Sacramento	Daisy	10 00
Second best suckling colt	Geo. W. Hancock	Sacramento	Theta	5 00
CLASS V—CARRIAGE HORSES.				
Best matched span	W. R. S. Foye	Sacramento	Frank and Charlie	Sil. goblet or $40
Second best matched span	B. Madden	Dixon	Peanut and Popcorn	Sil. goblet or $20
CLASS VI—ROADSTER TEAMS.				
Best double team	H. Stegall	Woodland	Ralph Sisters	Sil. goblet or $40
Second best roadster team	A. H. Thomassen	Routier's Stat'n	Jane and Lena T.	Sil. goblet or $20
CLASS VII—STANDARD TROTTERS—STALLIONS.				
Best four years old and over	J. B. Haggin	San Francisco	Alaska	$30 00
Second best four years old and over				
Best one year old	J. A. McCloud	Stockton	Mount Vernon	11 25
Second best one year old				

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Premium.
MARES.				
Best four years old and over	J. B. Haggin	San Francisco	Woodbine	$40 00
Second best four years old and over	E. H. Miller, Jr.	San Francisco	Adalia	20 00
CLASS VIII—SADDLE HORSES.				
Best saddle horse	Ben. E. Harris	San Francisco	Vanity	20 00
Second best saddle horse	Ben. E. Harris	San Francisco	Mike Price	10 00
CLASS IX—HORSES' SWEEPSTAKES.				
Best stallion	J. B. Haggin	San Francisco	Algona	Sil. pitch'r or $75
Best mare	J. B. Haggin	San Francisco	Woodbine	Sil. pitc'r or $100
JACKS.				
Best four years old and over	W. A. Munnion	Dixon	John Henry	$40 00
Second best four years old and over	J. Coonrod	Davis	Black Jack	20 00
Best three years old	L. U. Shippee	Stockton	Castilian	22 50
Second best three years old				
JENNIES.				
Best four years old and over	L. U. Shippee	Stockton	Beauty	22 50
Second best four years old and over				
MULES.				
Best span	N. Miner	Davis	Coalie and Jennie	18 75
Second best span				
CLASS I—DURHAM CATTLE—BULLS.				
Best three years old and over	C. Younger	Forest Home	2d Duke of Alameda	40 00
Second best three years old and over	M. Wick	Oroville	Major Butler	20 00
Best two years old	C. Younger	Forest Home	3d Duke of Alameda	30 00
Second best two years old	E. Comstock	Sacramento	Garfield	15 00
Best one year old	C. Younger	Forest Home	Forest King	20 00
Second best one year old	C. Younger	Forest Home	4th Duke of Forest Home	10 00
Best bull calf	C. Younger	Forest Home	8th Duke of Forest Home	15 00
Second best bull calf	M. Wick	Oroville	Roscoe	7 50

COWS.

Best three years old and over	C. Younger	Forest Home	Red Dollie 2d	$40 00
Second best three years old and over	M. Wick	Oroville	Ruby	20 00
Best two years old	C. Younger	Forest Home	Oxford Rose 3d	30 00
Second best two years old	C. Younger	Forest Home	7th Rose of Forest Home	15 00
Best one year old	C. Younger	Forest Home	Red Dollie 11th	20 00
Second best one year old	C. Younger	Forest Home	9th Rose of Forest Home	10 00
Best heifer calf	C. Younger	Forest Home	10th Rose of Forest Home	15 00
Second best heifer calf	C. Younger	Forest Home	Red Dollie 14th	7 50

JERSEY CATTLE—BULLS.

Best three years old and over	Robt. Beck	San Francisco	Buffalo Bill	40 00
Second best three years old and over	Jas. Askew	El Dorado	General Grant	20 00
Best two years old	R. Noell	Grass Valley	Commodore	30 00
Second best two years old	J. Lyon	Placerville	Garfield	15 00
Best one year old	Henry Pierce	San Francisco	Wm. of Scituate	20 00
Second best one year old	P. Stanton	Sacramento	Fred Baker	10 00
Best bull calf	Henry Pierce	San Francisco	Shotover of Y. B.	15 00
Second best bull calf	Robt. Beck	San Francisco		7 50

COWS.

Best three years old and over	Henry Pierce	San Francisco	Daisy of G.	40 00
Second best three years old and over	R. Noell	Grass Valley	Katie	20 00
Best two years old	Robt. Beck	San Francisco	Miss Murdoch 2d	30 00
Second best two years old	R. Noell	Grass Valley	Nellie	15 00
Best one year old	Henry Pierce	San Francisco	Carrie of Y. B.	20 00
Second best one year old	Jas. Askew	El Dorado	1st Duchess of El Dorado	10 00
Best heifer calf	R. Noell	Grass Valley		15 00
Second best heifer calf	P. Stanton	Sacramento	Olita	7 50

DEVON CATTLE—BULLS.

Best three years old and over	R. McEnespy	Chico	Ben Butler	30 00
Second best three years old and over				

COWS.

Best three years old and over	C. M. Bryant	Chico	Queen	40 00
Second best three years old and over	R. McEnespy	Chico	Mayflower	20 00
Best two years old	R. McEnespy	Chico	Maud	22 50
Second best two years old				
Best one year old	R. McEnespy	Chico	Spry	15 00
Second best one year old				
Best heifer calf	R. McEnespy	Chico	Trixie	11 25

First Department—Continued.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Premium.
Second best heifer calf				
AYRSHIRE CATTLE—BULLS.				
Best three years old and over	Geo. Bement	Redwood City	Archie	$30 00
Second best three years old and over				
Best two years old	Geo. Bement	Redwood City	Lindo	22 50
Second best two years old				
Best one year old	Geo. Bement	Redwood City	Macbeth	15 00
Second best one year old				
Best bull calf	Geo. Bement	Redwood City		11 25
Second best bull calf				
COWS.				
Best three years old and over	Geo. Bement	Redwood City	Stellita	30 00
Second best three years old and over				
Best two years old	Geo. Bement	Redwood City	Stellinita	22 50
Second best two years old				
Best one year old	Geo. Bement	Redwood City	Sultana	15 00
Second best one year old				
Best heifer calf	Geo. Bement	Redwood City	Sybil	11 25
Second best heifer calf				
HERDS—CATTLE.				
Best herd Durham cattle, two years old and over	C. Younger	Forest Home	2d Duchess of Alameda, 2d Rose of Forest Home, Red Dollie 2d, Jessie Maynard, Oxford Rose 3d	60 00
Best herd Durham cattle under two years old	C. Younger	Forest Home	Forest King, 5th Louan of Forest Home, 9th Rose of Forest Home, Red Dollie 11th, 10th Rose of Forest Home	Sil. pitch'r or $30
Best herd Jersey cattle, two years old and over	Henry Pierce	San Francisco	Victor of Y. B. and four cows	Sil. pitch'r or $60
Best herd Jersey cattle under two years old	Henry Pierce	San Francisco	Wm. of Scituate and four cows	Sil. pit. or $22 50
Best herd Guernsey cattle	Henry Pierce	San Francisco	Champion of G. and four cows	Sil. pitch'r or $45

Best herd Devon cattle	R. McEnespy	Chico	Ben Butler and four cows	Sil. pitch'r or $45
Best herd Ayrshire cattle	Geo. Bement	Redwood City	Archie and four cows	Sil. pitch'r or $45
CLASS II—GRADED CATTLE.				
Best three years old and over	R. J. Merkley	Sacramento	Rose	$30 00
Best two years old	E. Comstock	Sacramento	Chub	10 00
Best one year old	P. H. Murphy	Brighton	Blossom	5 00
Best heifer calf	J. Lyon	Placerville	Pink	3 75
CLASS III—SWEEPSTAKES CATTLE.				
Best bull, any age	C. Younger	Forest Home	2d Duke of Alameda	Sil. pit. or $100
Best cow	M. Wick	Oroville	Gem	Sil. pit. or $100
Best bull and three calves	C. Younger	Forest Home	2d Duke of Alameda and three calves	Sil. pit. or $100
Best milch cow	Geo. Bement	Redwood City	Lady Merryton	$40 00
CLASS I—SHEEP—FRENCH MERINO.				
Best ram, one year and under two	J. R. Bramton	Reno, Nevada	Excelsior	16 87
CLASS II—SHEEP—SPANISH MERINO.				
Best ram, two years and over	J. H. Strowbridge	Haywards	Sprightly	30 00
Second best ram, two years and over	F. Bullard	Woodland	Long Wool	15 00
Best ram, one year and under two	J. H. Strowbridge	Haywards	Comet	22 50
Second best ram, one year and under two	F. Bullard	Woodland	Snowflake	11 25
Best three ram lambs	F. Bullard	Woodland		22 50
Second best three ram lambs	J. H. Strowbridge	Haywards		11 25
Best pen ewes, two years and over	J. H. Strowbridge	Haywards		22 50
Second best pen ewes, two years old and over	F. Bullard	Woodland		11 25
Best pen ewes, one year and under two	F. Bullard	Woodland		22 50
Second best pen ewes, one year and under two	J. H. Strowbridge	Haywards		11 25
Best pen five ewe lambs	F. Bullard	Woodland		22 50
Second best pen five ewe lambs	J. H. Strowbridge	Haywards		11 25
Best ram and five lambs	J. H. Strowbridge	Haywards		22 50
Second best ram and five lambs	F. Bullard	Woodland		11 25
CLASS III—COTSWOLD, SHROPSHIRE, ETC., SHEEP.				
Best ram, two years and over	J. B. Hoyt	Suisun	Salopian	30 00
Second best ram, two years and over	C. Younger	Forest Home	Hancock	15 00
Best ram, one year and under two	J. B. Hoyt	Suisun	Duke	22 50
Second best ram, one year and under two	C. Younger	Forest Home		11 25
Best three ram lambs	C. Younger	Forest Home		18 75

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Premium.
Second best three ram lambs				
Best pen ewes, two years and over	J. B. Hoyt	Suisun		$22 50
Second best pen ewes, two years and over	C. Younger	Forest Home		11 25
Best pen ewes, one year and under two	C. Younger	Forest Home		22 50
Second best pen ewes, one year and under two	J. B. Hoyt	Suisun		11 25
Best pen five lambs	C. Younger	Forest Home		18 75
Best ram and five of his lambs	C. Younger	Forest Home		22 50
CLASS IV—CROSSED SHEEP.				
Best pen five ewes, two years and over	J. B. Hoyt	Suisun		11 25
SWEEPSTAKES SHEEP.				
Best ram and five lambs	J. H. Strowbridge	Haywards	Sprightly and lambs	50 00
CLASS I—SWINE—BERKSHIRE.				
Best boar, two years and over	J. Kennedy	Sacramento	Prince	20 00
Second best boar, two years and over	John Rider	Sacramento	Jolly	10 00
Best boar, under two years	John Rider	Sacramento	Brigadier	15 00
Best boar, six months and under one year	John Rider	Sacramento	Nimrod	10 00
Best breeding sow	John Rider	Sacramento	Maud Hamilton	20 00
Second best breeding sow	Thos. Waite	Brighton	Pacific Queen	10 00
Best pair pigs under ten months	John Rider	Sacramento	Nimbus and Laguna	15 00
Second best pair pigs under ten months				
POLAND CHINA SWINE.				
Best boar under two years	E. Gallup	Hanford	King of Bounegview	15 00
Best boar, six months old and under one year	J. Melvin	Davisville	John	10 00
Second best boar, six months old and under one year	E. Gallup	Hanford	Black Boy	5 00
Best breeding sow	E. Gallup	Hanford	Cantilena	20 00
Second best breeding sow	J. Melvin	Davisville	Daisy	10 00
Best sow, six months and under one year	E. Gallup	Hanford	Bell Donna	10 00
Second best sow, six months and under one year	J. Melvin	Davisville	Bessie	5 00
Best pair pigs under ten months	E. Gallup	Hanford	Vindigo and California IXL	15 00
Second best pair pigs under ten months	E. Gallup	Hanford	Nimrod and Jewel	7 50

SWEEPSTAKES SWINE.

Best boar	John Rider	Sacramento	Commodore	$30 00
Best sow	John Rider	Sacramento	Maud Hamilton	30 00
Best pen six pigs	M. Sprague	Sacramento		20 00
Best family	John Rider	Sacramento		25 00

POULTRY.

Best pair Light Brahmas	T. D. Morris	Sonoma		5 00
Best pair Dark Brahmas	T. D. Morris	Sonoma		5 00
Best pair Partridge Cochins	T. Waite	Brighton		5 00
Best pair Black Cochins	T. D. Morris	Sonoma		5 00
Best pair Buff Cochins	T. D. Morris	Sonoma		5 00
Best pair Silver-Spangled Hamburgs	Thos. Waite	Brighton		5 00
Best pair Black Hamburgs	T. D. Morris	Sonoma		5 00
Best pair White Leghorns	Thos. Waite	Brighton		5 00
Best pair Brown Leghorns	Thos. Waite	Brighton		5 00
Best pair Black Leghorns	R. G. Head	Napa		5 00
Best pair White-faced Black Spanish	T. D. Morris	Sonoma		5 00
Best pair Dorkings	E. Gallup	Hanford		5 00
Best pair Plymouth Rocks	R. G. Head	Napa		5 00
Best pair Houdans	Thos. Waite	Brighton		5 00
Best pair Golden Seabright Bantams	Thos. Waite	Brighton		5 00
Best pair Game Bantams	T. D. Morris	Sonoma		5 00
Best pair Bronze turkeys	R. G. Head	Napa		10 00
Best pair Rouen ducks	R. G. Head	Napa		5 00
Best pair Pekin ducks	R. G. Head	Napa		5 00
Best pair Toulouse geese	T. D. Morris	Sonoma		5 00
Best pair Bremen geese	T. D. Morris	Sonoma		5 00
Best pair China geese	T. D. Morris	Sonoma		5 00
Best pair Langshans	R. G. Head	Napa		5 00
One pair White Guineas	T. D. Morris	Sonoma		Special premium
Six Light Brahmas, six Black Leghorns, and six Langshans	R. G. Head	Napa		Special premium

SECOND DEPARTMENT.

MACHINERY, IMPLEMENTS, ETC.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Joseph Enright	San José	Cal. portable steam engine	$30 00
Huntington, Hopkins & Co.	Sacramento	Saw gummer	$2 00
F. M. McKeever	Sacramento	Steam engine	$30 00
Charles W. Caryl	San Francisco	Climax fire extinguisher	Diploma
CLASS II.			
A. F. Lashells	Biggs	Cylinder and concave teeth for separator	Diploma
Holman, Stanton & Co.	Sacramento	Cider mill	Diploma
Seymour, Sabin & Co.	Oakland	Sweep horse-power	$10 00
Baker & Hamilton	Sacramento	Best gen'l display by one house	$50 00
Baker & Hamilton	Sacramento	Best thrashing machine	$30 00
Baker & Hamilton	Sacramento	Best hay and straw cutter	Diploma
Baker & Hamilton	Sacramento	Hand corn sheller	Diploma
Baker & Hamilton	Sacramento	Vegetable cutter	Diploma
Root & Neilson	Sacramento	Hay press	$20 00
W. P. Prall	Napa	Eureka sulky horse rake	$5 00
Huntington, Hopkins & Co.	Sacramento	Lawn sprinkler	Diploma
B. F. Wellington	San Francisco	Lawn mower	Diploma
CLASS III.			
A. La Jeunesse	San Francisco	Automatic harrow	Prem. recomm'd
John D. Winters	Davisville	Best derrick for stacking straw	$10 00
John D. Winters	Davisville	Nets for header wagon, grain	$5 00
Davis & Co.	San Francisco	Best wheat drill, two-horse	$10 00
Davis & Co.	San Francisco	Grain broadcast sowing mach.	$10 00
Davis & Co.	San Francisco	Self-raking reaping machine	$10 00
Davis & Co.	San Francisco	Best reaping machine	$10 00
Davis & Co.	San Francisco	Best mowing machine	$10 00
Davis & Co.	San Francisco	Best self-binding harvester	$20 00
Davis & Co.	San Francisco	Best cultivator	$10 00
Seymour, Sabin & Co.	Oakland	Best double shovel plow	Diploma
Baker & Hamilton	Sacramento	Best wheat drill, two-horse	Diploma
Baker & Hamilton	Sacramento	Best comb'd reaper and mower	$10 00
Baker & Hamilton	Sacramento	Best corn planter, horse-power	$5 00
Baker & Hamilton	Sacramento	Best corn-planter, hand-power	$2 00
Baker & Hamilton	Sacramento	Best potato planter	$5 00
Baker & Hamilton	Sacramento	Best one-horse cultivator	$5 00
Baker & Hamilton	Sacramento	Best horse hoe	Diploma
Benicia Agricultural Works	Benicia	Best header	$40 00
Benicia Agricultural Works	Benicia	Best harrow	Diploma
William Gutenberger	Sacramento	Best field roller and crusher	$10 00
D. Howson	Stockton	Best com. header and thrasher	$75 00
A. W. Lockhart	Sacramento	Best self-feeder and elevator for thrasher	$10 00
CLASS IV.			
D. G. Paul	Livermore	U. S. windmill	$25 00
M. L. Merry	Chico	Feed mill	$10 00
Seymour, Sabin & Co.	Oakland	Grain cleaner attachment	$10 00
W. E. Brown	Davisville	Combination beam scales	Diploma
John Klees	Sacramento	Fanning mill	$5 00
— Stanley	San José	Campton's patent gate	$10 00
William B. Williams	Oakland	Hinge and roller for gate	Diploma
B. N. Bugby	Sacramento	Patent butter cooler	Silver medal
Charles H. Laufkotter	Sacramento	Bottle cooler and refrigerator	Sil. med. for bottle cooler, dip. for refrigerator
CLASS V.			
Holman, Stanton & Co.	Sacramento	Best cabbage cutter	$2 00
Holman, Stanton & Co.	Sacramento	Champion farm road scraper	$5 00

SECOND DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Baker & Hamilton	Sacramento	Best general display of haying and harvesting tools	$10 00
Baker & Hamilton	Sacramento	Garden seed drill	$2 00
William Gutenberger	Sacramento	Best appliance for raising water for irrigating or mining purposes	$20 00
D. Dempsey	San Francisco	Eli Meeker's sun dryer	$10 00
CLASS VI.			
Holman, Stanton & Co.	Sacramento	Best steel plow	$5 00
Holman, Stanton & Co.	Sacramento	Best one-horse plow	$5 00
Holman, Stanton & Co.	Sacramento	Best dynameter	$5 00
George A. Davis & Co.	San Francisco	Best stubble plow	$5 00
George A. Davis & Co.	San Francisco	Best sod plow	$5 00
Baker & Hamilton	Sacramento	Best cast-iron plow	$5 00
Baker & Hamilton	Sacramento	Best chilled plow	$5 00
Benicia Agricultural Works	Benicia	Best gang plow	$25 00
Benicia Agricultural Works	Benicia	Best subsoil plow	$5 00
Benicia Agricultural Works	Benicia	Best open-ditching plow	$5 00
CLASS VII.			
F. P. Lowell	Sacramento	Studebaker farm wagon for all purposes	Diploma recm'd
F. P. Lowell	Sacramento	Studebaker business wagon	Diploma recm'd
Jos. F. Hill & Co.	Sacramento	Best trotting wagon	$10 00
Jos. F. Hill & Co.	Sacramento	Best business wagon	$10 00
Jos. F. Hill & Co.	Sacramento	Best general display wagon material, wheels, etc.	Diploma
Benicia Agricultural Works	Benicia	Best farm wag. for all purposes	$20 00
Palm Bros.	Sacramento	Best spring market wagon	$10 00
A. Meister	Sacramento	Best lady's phaeton	$10 00
Palm Bros.	Sacramento	Best breaking cart	$10 00
M. J. McCue	San Francisco	Best family carriage	Diploma and $30
M. J. McCue	San Francisco	Best top buggy	$15 00
M. J. McCue	San Francisco	Best open buggy	$10 00
Jos. F. Hill & Co.	Sacramento	Best two-seated open wagon	$15 00
M. J. McCue	San Francisco	One-pole breaking cart	Diploma
D. R. McLennan	St. Helena	California gig, two-wheel	Diploma
MISCELLANEOUS.			
John A. Roebling & Sons	San Francisco	Buckthorn fence	$5 and sil. medal
P. K. Stockton	St. Helena	Vineyard plow, gang, and cultivator	Diploma
H. E. Fairman		Post driver and sharpener	Diploma
D. A. Faulkner		Punching press	Prem. recomm'd
D. A. Faulkner		Wheel jack	Prem. recomm'd
Huntington, Hopkins & Co.	Sacramento	Shears, punch, etc.	Prem. recomm'd
Baker & Hamilton	Sacramento	Portable forge	Prem. recomm'd
Baker & Hamilton	Sacramento	Derrick fork	Prem. recomm'd
Baker & Hamilton	Sacramento	Barley fork	Prem. recomm'd
Baker & Hamilton	Sacramento	Weed cutter	Hon. mention
J. A. Petty		Common Sense sickle grinder	Favorable men.
— Hickman		Improvement on header	Prem. recomm'd

THIRD DEPARTMENT.

TEXTILE FABRICS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Capital Woolen Mills	Sacramento	Best exhibit men's clothing	$10 00
Weinstock & Lubin	Sacramento	Best exhibit boys' clothing	$5 00
D. H. Quinn	Sacramento	Best exhibit men's hats and caps	Silver medal
Dale & Co.	Sacramento	Best exhibit silk goods by one factory	$25 00
Capital Woolen Mills	Sacramento	Best display woolen goods by one factory	$50 00
Ben. Cohen	Sacramento	Best Turkish rug	$5 00
Capital Woolen Mills	Sacramento	Best Mackinac blankets	$5 00
Capital Woolen Mills	Sacramento	Best stocking yarn	$3 00
D. H. Quinn	Sacramento	Best silk hat	$5 00
Weinstock & Lubin	Sacramento	Best soft hat	$5 00
Fred. Mason	Sacramento	Best gentlemen's shirts	Silver medal
S. Lipman & Co.	Sacramento	Best display drygoods	$20 00
Weinstock & Lubin	Sacramento	Best display fancy goods	$20 00
Weinstock & Lubin	Sacramento	Best display naval and military goods	Silver medal
Weinstock & Lubin	Sacramento	Best display shoulder-braces and corsets	Silver medal
Weinstock & Lubin	Sacramento	Best display cotton sheeting	$5 00
Weinstock & Lubin	Sacramento	Best ten yards linen	$20 00
Weinstock & Lubin	Sacramento	Best ten yards linen diaper	$10 00
Weinstock & Lubin	Sacramento	Best oil cloth and table cover	$3 00
L. C. Moore	Truckee	Exhibit llama and northern Oregon wolf-skins (combined) robe	Spec. prem. rec.
Miss H. M. Smith	Sacramento	Best knitted shawl	$5 00
Capital Woolen Mills	Sacramento	Best ten yards kersey	$5 00
Fred. Mason	Sacramento	Best exhibit neckties and bows	Silver medal
Jas. C. Glover	Sacramento	Turkish patterns and Kensington patterns, etching, and outline embroidery	Spec. prem. rec.
Mrs. A. Phelps	Sacramento	Exhibit Turkish rugs	Spec. prem. rec.
CLASS II.			
Weinstock & Lubin	Sacramento	Children's clothing, Cal. made	$15 00
Weinstock & Lubin	Sacramento	Velvet bonnet	$5 00
Weinstock & Lubin	Sacramento	Velvet hat	$5 00
Weinstock & Lubin	Sacramento	Best made and handsomest dress	$10 00
Miss Dora Woodburn	Sacramento	Ottoman cover	$5 00
Miss Dora Woodburn	Sacramento	Embroidered handkerchiefs	$3 00
Miss Dora Woodburn	Sacramento	Silk embroidery	$5 00
Miss Belle Felter	Sacramento	Embroidered table cover	$5 00
Miss Belle Felter	Sacramento	Display bead work	$5 00
Miss Belle Felter	Sacramento	Lambrequin	$5 00
Miss Belle Felter	Sacramento	Display Turkish embroidery	$5 00
Miss Belle Felter	Sacramento	Handsomest toilet set	$10 00
Miss Phebe C. Brown	Sacramento	Embroidered chair seat, Kensington	$3 00
Miss Ida Allen	Nevada City	Croquet shawl	$5 00
Mrs. W. M. Lyon	Sacramento	Applique work	$3 00
Mrs. W. M. Lyon	Sacramento	Table scarf	$3 00
Mrs. W. M. Lyon	Sacramento	Embroidered wall panel	$3 00
Mrs. W. M. Lyon	Sacramento	Display lovelace embroidery	$5 00
Mrs. W. M. Lyon	Sacramento	Specimen braid work	$5 00
Mrs. W. M. Lyon	Sacramento	Outline embroidery	$3 00
Mrs. W. M. Lyon	Sacramento	Arraseno embroidery	$3 00
Mrs. W. M. Lyon	Sacramento	Display porcelain painting	$5 00

THIRD DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. W. M. Lyon	Sacramento	Handsomest dis. fancy articles	$20 00
Miss Carrie Philips	Sacramento	Display Kensington work	$5 00
Mrs. E. R. Hamilton	Sacramento	Embroidered fire screen	$5 00
Miss Carrie Yoerk	Sacramento	Embroidered sofa cushion	$5 00
Miss Carrie Yoerk	Sacramento	Chenille work	$5 00
Miss Nettie Hamilton	Sacramento	Embroidered lady's dress	$5 00
Mrs. Adna Phelps	Sacramento	Hearth rug	$5 00
Mrs. Joseph Hunter	Yolo County	Knit bedspread	$5 00
Misses Brothers	Sacramento	Display millinery	$20 00
Misses Brothers	Sacramento	Display feathers	$10 00
Misses Brothers	Sacramento	Variety artificial flowers	$10 00
Misses Brothers	Sacramento	Silk bonnet	$5 00
Mrs. Wm. Tibbit	Sacramento	Pillow and sheet shams, darned netting	$5 00
Chas. E. Passmore	Santa Cruz	Display sea mosses	$3 00
Chas. E. Passmore	Santa Cruz	Display shell flowers	$3 00
Mrs. F. A. Ebel	Sacramento	Specimen cone work	$3 00
Mrs. S. Conrad	Sacramento	Crochet bedspread	$5 00
Mrs. S. Conrad	Sacramento	Variety linen embroidery	$5 00
Mrs. Wm. Kirk	Oakland	Worked quilt	$5 00
Miss Abbie Sawtelle	Sacramento	Silk quilt	$5 00
Miss Abbie Sawtelle	Sacramento	Fine lace work	$3 00
Mrs. W. L. Scott	Red Bluff	Patchwork quilt	$5 00
Mrs. F. F. Thomson	Sacramento	Child's afghan	$3 00
Mrs. N. D. Goodell	Sacramento	Carriage afghan	$5 00
Miss H. M. Smith	Sacramento	Ornamental needle work	$5 00
Miss M. E. McCormick	San Francisco	Pillow shams, painted on satin	Silver medal
Miss Phil. Edwards	San Francisco	Elegant piece of embroidery	Silver medal
Miss Mary E. Aiken	Sacramento	Embroidered children's clothes	$5 00
CLASS III.			
F. Foster	Sacramento	Display fine bookbinding	Silver medal
H. Lowery	Sacramento	Display maps and charts	Silver medal
W. A. & C. S. Houghton	Sacramento	Display stationery	Silver medal
W. H. Eckhardt	Sacramento	Specimen steel engraving	Silver medal
Day & Joy	Sacramento	Exhibit book printing, etc.	Silver medal
Sacramento Business College	Sacramento	Exhibit penmanship and pen drawing	Rec. to Directors
Geo. Schmitt	Sacramento	Exhibit mechanical drawings (mechanical and free-hand)	Diploma
F. Foster	Sacramento	Display plain bookbinding	Silver medal
F. Foster	Sacramento	Display blank book ruling and binding	Silver medal
JUVENILE DEPARTMENT.			
Miss Nettie Billiou	Sacramento	Two shuttle-stitch cushions	Special prem
Miss Nettie Billiou	Sacramento	One shell tidy	
Miss Phebe C. Brown	Sacramento	Worsted embroidery	Spec. p. nap. ring
Miss Bertha Conrad	Sacramento	Best knit wool stockings	Napkin ring
Miss Bertha Conrad	Sacramento	Patchwork quilt	Napkin ring
Miss Alida B. Lewis	Sacramento	Leaf and moss work	Napkin ring
Miss Lillie B. Cutter	Sacramento	Outline embroidery	Special prem
Miss Lillie B. Cutter	Sacramento	Netting	Napkin ring

FOURTH DEPARTMENT.

LEATHER, WORKED METALS, FURNITURE, ETC.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
F. Foster	Sacramento	Display bound account books	S. medal and $5
Weinstock & Lubin	Sacramento	Dis. leather gloves and mittens	Silver medal
Weinstock & Lubin	Sacramento	Display dress boots	$5 00
Weinstock & Lubin	Sacramento	Display heavy boots	$5 00
Weinstock & Lubin	Sacramento	Display gents' dress shoes	$5 00
Weinstock & Lubin	Sacramento	Display Congress gaiters	$5 00
Weinstock & Lubin	Sacramento	Display ladies' gaiters	$3 00
Weinstock & Lubin	Sacramento	Display ladies' slippers	$3 00
Weinstock & Lubin	Sacramento	Display men's and boys' boots and shoes	Silver medal
Weinstock & Lubin	Sacramento	Display of ladies' and misses' boots and shoes	Silver medal
Asher Longshore	Sacramento	Trunks, valises, and carpet-sks	S. medal and $10
Asher Longshore	Sacramento	Carpet sack	Diploma
Huntington, Hopkins & Co.	Sacramento	Display rubber hose and belt'g	Silver medal
Huntington, Hopkins & Co.	Sacramento	Display leather belting	Silver medal
Tubbs & Co.	San Francisco	Display cordage	Silver medal
C. H. Krebs & Co.	Sacramento	Display of paper-hangings and borders	Hon. mention
F. Foster	Sacramento	Exhibit marble paper, home manufacture	Hon. men. and $5
Whittier, Fuller & Co.	Sacramento	Display of paper-hangings and borders	$5 00
A. A. Van Voorhies & Co.	Sacramento	Double buggy harness	S. medal and $10
A. A. Van Voorhies & Co.	Sacramento	Single buggy harness	$10
A. A. Van Voorhies & Co.	Sacramento	Display Mexican saddles	$5 00
A. A. Van Voorhies & Co.	Sacramento	Display leather	Silver medal
A. A. Van Voorhies & Co.	Sacramento	Display saddles and bridles	Silver medal
A. A. Van Voorhies & Co.	Sacramento	Display saddle-trees	Diploma
A. A. Van Voorhies & Co.	Sacramento	Display shoe lasts, pegs, and lasting machines	$5 00
Locke & Lavenson	Sacramento	Display carpets and rugs	$20 00
Mrs. A. E. Dutton	Sacramento	Rag carpet	$5 00
CLASS II.			
Scott & Muir	Sacramento	Display gas chandeliers and burners	$10 00
Scott & Muir	Sacramento	Display lamps	Diploma
L. L. Lewis & Co.	Sacramento	Display tinware	Silver medal
L. L. Lewis & Co.	Sacramento	Display kitchen utensils of tin	$5 00
George T. Bush	Sacramento	Display brass work	$10 00
George T. Bush	Sacramento	Display plumbers' goods and ware	Silver medal
S. Trustman	Concord	Display wire cloth	First premium
Huntington, Hopkins & Co.	Sacramento	Display modern building hardware	$20 00
Huntington, Hopkins & Co.	Sacramento	Display general hardware	$20 00
Huntington, Hopkins & Co.	Sacramento	Display iron and steel	$10 00
Huntington, Hopkins & Co.	Sacramento	Barb wire fencing	$5 and s. medal
Huntington, Hopkins & Co.	Sacramento	Display mechanics' tools	$20 00
Huntington, Hopkins & Co.	Sacramento	Display table cutlery	Silver medal
Huntington, Hopkins & Co.	Sacramento	Display pocket cutlery	$5 00
Huntington, Hopkins & Co.	Sacramento	Circular saws	$5 00
Huntington, Hopkins & Co.	Sacramento	Display of files	$5 00
Huntington, Hopkins & Co.	Sacramento	Anti-friction metal	Diploma
Huntington, Hopkins & Co.	Sacramento	Exhibition of shot	Diploma
A. A. Van Voorhies & Co.	Sacramento	Display saddlers' hardware	$10 00
Truman S. Clark & Son	San Francisco	Display wire goods	$5 and diploma
B. F. Wellington	San Francisco	Pruning shears	$5 00

FOURTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS III.			
Aitken & Fish	Sacramento	Parlor grate	$3 00
L. L. Lewis & Co.	Sacramento	Cooking stove, for wood	$5 00
L. L. Lewis & Co.	Sacramento	Cooking stove, for coal	$5 00
L. L. Lewis & Co.	Sacramento	Warming furnace	$5 00
L. L. Lewis & Co.	Sacramento	Parlor stove	$5 00
L. L. Lewis & Co.	Sacramento	Cooking range	$10 00
L. L. Lewis & Co.	Sacramento	Display hollow iron ware	$5 00
L. L. Lewis & Co.	Sacramento	Ornamental fruit and flower stand	$5 00
L. L. Lewis & Co.	Sacramento	Portable range	$5 00
L. L. Lewis & Co.	Sacramento	Laundry stove	$5 00
CLASS IV.			
F. R. Girard	San Francisco	Best display musical instrum'ts	Dip. and $20
L. K. Hammer	Sacramento	Best display brass and silver wind instruments	Silver medal
L. K. Hammer	Sacramento	Reed and stringed instruments	Silver medal
A. M. Goodnough	San Francisco	Best piano—Bradbury	$20 00
A. M. Goodnough	San Francisco	Best organ—Smith American	$20 00
M. Pearson	Sacramento	Display of five organs	Spec. prem. rec
CLASS V.			
John Breuner	Sacramento	Dressing bureau	$10 00
John Breuner	Sacramento	Sofa	$10 00
John Breuner	Sacramento	Lounge	$5 00
John Breuner	Sacramento	Extension table	$5 00
John Breuner	Sacramento	Office chair	$5 00
John Breuner	Sacramento	Set parlor chairs	$10 00
John Breuner	Sacramento	Center table	$5 00
John Breuner	Sacramento	Set parlor furniture	$20 00
John Breuner	Sacramento	Display furniture	$20 00
John Breuner	Sacramento	Mattresses	$5 00
John Breuner	Sacramento	Bookcase	$5 00
John Breuuer	Sacramento	Wardrobe	$10 00
John Breuner	Sacramento	Sick chair and couch	$5 00
John Breuner	Sacramento	Spring bed	$5 00
John Breuner	Sacramento	Display upholstery	$10 00
John Breuner	Sacramento	Office desk	$5 00
W. H. Mead	Sacramento	Pair side tables	$5 00
J. S. Bennett	San Francisco	Set bedroom furniture	$10 00
P. Liesenfeld	San Francisco	Billiard table	$10 00
T. S. Clark & Son	San Francisco	Woven wire mattresses and iron bedsteads	Spec. prem. rec
CLASS VI.			
W. Taylor	Sacramento	Scroll sawing	$5 00
Billingsley & Co.	Sacramento	Cedar ware display	$5 00
Billingsley & Co.	Sacramento	Pine ware display	$5 00
Billingsley & Co.	Sacramento	Oak ware display	$5 00
Billingsley & Co.	Sacramento	Willow ware display	$10 00
Billingsley & Co.	Sacramento	Splitwood baskets display	$3 00
Billingsley & Co.	Sacramento	Display osier willow	$5 00
Billingsley & Co.	Sacramento	Display wooden ware	$25 00
Billingsley & Co.	Sacramento	Exhibition broom-corn brooms and brushes	$10 00
Billingsley & Co.	Sacramento	Assortment hair brushes	$5 00
Billingsley & Co.	Sacramento	Assortment cooper's ware	$10 00
Billingsley & Co.	Sacramento	Churn	$5 recommended
Billingsley & Co.	Sacramento	Clothes horse	Diploma recm'd
John D. Winters	Davisville	Golden Gate washing machine	Diploma recm'd
R. W. Brehn	San Francisco	Turning lathe work	$5 00
CLASS VII.			
A. A. McLean	San Francisco	Case trusses (Cal. invention)	Gold medal rec
Weinstock & Lubin	Sacramento	Thermometer	Diploma
Weinstock & Lubin	Sacramento	Display clocks	Hon. mention
Weinstock & Lubin	Sacramento	Eight-day clock	Diploma

Fourth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Weinstock & Lubin	Sacramento	Achromatic telescope	Diploma
C. N. West	San Francisco	Electro-medical belt	Silver medal rec
R. A. Fisk	Sacramento	Electro-magnetic apparatus	Diploma
R. A. Fisk	Sacramento	Electro telegraph	Diploma
R. A. Fisk	Sacramento	Electric machine	Diploma
R. A. Fisk	Sacramento	Galvanic battery and apparatus	Diploma
Henry Eckhardt	Sacramento	Sporting rifle	$5 00
Henry Eckhardt	Sacramento	Breech-loading shotgun	$5 00
Henry Eckhardt	Sacramento	Game bag	$3 00
Henry Eckhardt	Sacramento	Display firearms	Silver medal
Henry Eckhardt	Sacramento	Double-barrel shotgun	$5 00
Robert Reed	Oakland	Display artificial limbs	S. medal and dip
CLASS VIII.			
Wm. T. Coleman & Co.	San Francisco	Royal baking powder	Diploma
Davis & Cooper	San Francisco	Davis' waterproof blacking	$2 00
Davis & Cooper	San Francisco	Davis' harness oil	
Davis & Cooper	San Francisco	Davis' boot polish	
M. A. Reaves	San Francisco	Great electric hair tonic	Diploma
Huntington, Hopkins & Co.	Sacramento	Stove polish	Diploma
CLASS IX.			
Billingsley & Co.	Sacramento	Demijohns	Diploma
John Carlaw	Sacramento	Dressed stone	$5 00
W. F. Peterson	Sacramento	Display confectionery	$10 00
Hobby & Ellsworth	Sacramento	Display stoneware	$10 00
Hobby & Ellsworth	Sacramento	Stoneware	Diploma
Hobby & Ellsworth	Sacramento	Sample drain tile	$5 00
Hobby & Ellsworth	Sacramento	Terra cotta	Diploma
Hobby & Ellsworth	Sacramento	Fire bricks	$3 00
Hobby & Ellsworth	Sacramento	Pottery, various kinds	Silver medal
Hobby & Ellsworth	Sacramento	Flooring tile	$5 00
CLASS X.			
H. P. Martin	Woodland	General display artificial stone, especially for cemetery inclosures	S. prem. rec'm'd
CLASS XI.			
I. L. Dias	Petaluma	Petaluma incubator	Silver medal
I. L. Dias	Petaluma	Artificial mother or brooder	Diploma
John Carlaw	Sacramento	Six pieces polished granite	$30 00
Aitken & Fish	Sacramento	Collection polished marble work	$30 00
Aitken & Fish	Sacramento	Display marbleized slate mantels	Silver medal
James Seadler	Sacramento	Design city residence	Silver medal
James Seadler	Sacramento	Design farm house	Silver medal
MISCELLANEOUS DEPARTMENT.			
C. F. Tranley	San Francisco	Wall paper signs	Silver medal rec
T. W. Schwamb	Sacramento	Royal St. John sewing machine, made at Springfield, Ohio	Diploma
A. A. Van Voorhies & Co.	Sacramento	One collar	Silver med. rec
A. A. Van Voorhies & Co.	Sacramento	Farm harness	
H. P. Martin	Woodland	Sunshade	Diploma
Miss A. Baston	Sacramento	Metallic scientific dress-cutter	Fav. con. rec
Mrs. F. W. Fratt	Sacramento	Curios	Hon. ment'n rec

FIFTH DEPARTMENT.

GRAIN, VEGETABLES, DAIRY PRODUCTS, ETC.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Seal Rock Tobacco Co.	San Francisco	Display California manufactured tobacco	Dip. and $10 00
R. Dale & Co.	Sacramento	Exhibition of the silk business, from the mulberry tree to the silk cocoon, including the feeding of the worms, their eggs, etc.	$25 00
CLASS II.			
C. McCreary & Co.	Sacramento	100 pounds Sacramento mills flour; 100 pounds Our Best Eureka flour; 100 pounds McCreary's pat. rolled flour	$20 00
John Bidwell	Chico	Two-bushel sample Australia wheat	$10 00
John Bidwell	Chico	Two-bushel sam. White Chile wheat	$10 00
John Bidwell	Chico	Two-bushel sample White Club wheat	$10 00
John Bidwell	Chico	Two-bushel sam. Proper wheat	$10 00
John Bidwell	Chico	Two-bushel sam. Sonora wheat	$10 00
John Bidwell	Chico	Two-bushel sam. Odessa wheat	$10 00
John Bidwell	Chico	Two-bushel sample rye	$5 00
John Bidwell	Chico	Two-bushel sample oats	$5 00
John Bidwell	Chico	Two-bushel sample barley	$5 00
John Bidwell	Chico	Variety wheat, in ear or head	$10 00
John Bidwell	Chico	Alfalfa seed, sample	$5 00
John Bidwell	Chico	Yellow corn, sample	$5 00
John Bidwell	Chico	White corn, sample	$5 00
John Bidwell	Chico	Early corn, sample	$5 00
John Bidwell	Chico	Exhibit Egyptian corn	$5 00
CLASS III.			
McGregor Bros.	Sacramento	One half bushel white potatoes	$5 00
McGregor Bros.	Sacramento	Peck tomatoes	$3 00
McGregor Bros.	Sacramento	One dozen green sweet corn	$3 00
McGregor Bros.	Sacramento	Three mountain sweet watermelons	$2 00
McGregor Bros.	Sacramento	Three watermelons	$3 00
McGregor Bros.	Sacramento	Six cucumbers	$2 00
McGregor Bros.	Sacramento	Twelve parsnips	$3 00
McGregor Bros.	Sacramento	Twelve carrots	$3 00
McGregor Bros.	Sacramento	Six turnip beets	$3 00
McGregor Bros.	Sacramento	Six drumhead cabbages	$3 00
McGregor Bros.	Sacramento	Six head red Dutch cabbage	$3 00
McGregor Bros.	Sacramento	Cabbages, six any other variety	$3 00
McGregor Bros.	Sacramento	Three heads cauliflower	$3 00
McGregor Bros.	Sacramento	Three heads broccoli	$3 00
McGregor Bros.	Sacramento	Six heads lettuce	$2 00
McGregor Bros.	Sacramento	One and a half peck red onions	$3 00
McGregor Bros.	Sacramento	One half peck yellow onions	$3 00
McGregor Bros.	Sacramento	One half peck peppers, for pickling	$3 00
McGregor Bros.	Sacramento	Twelve roots salsify	$3 00
McGregor Bros.	Sacramento	Six stalks celery	$3 00
McGregor Bros.	Sacramento	One half peck Lima beans, in pod	$3 00
McGregor Bros.	Sacramento	One half peck kidney bush beans, in pod	$3 00
McGregor Bros.	Sacramento	Three purple egg plants	$3 00
McGregor Bros.	Sacramento	Water cress	Premium
McGregor Bros.	Sacramento	One dozen radishes	Premium
McGregor Bros.	Sacramento	Best table vegetables	$20 00

Fifth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
McGregor Bros.	Sacramento	One half bushel potatoes any other variety	$5 00
Mrs. Thomas Hague	Sacramento	Six sugar beets	$3 00
Mrs. Thomas Hague	Sacramento	Six long blood beets	$3 00
Robert Brown	Brighton	Pumpkin	$3 00
John Bidwell	Chico	One half bushel sweet potatoes	$5 00
John Bidwell	Chico	Six marrow squashes	$3 00
John Bidwell	Chico	Six Hubbard squashes	$3 00
John Bidwell	Chico	Six crook-necked squashes	$3 00
John Bidwell	Chico	Three green-fleshed muskmelons	$3 00
John Bidwell	Chico	Three yellow-fleshed muskmelons	$3 00
CLASS IV.			
Frank Kunz	Sacramento	Collection of flowering plants, in bloom	$20 00
Frank Kunz	Sacramento	Roses, in bloom	$10 00
Frank Kunz	Sacramento	Fuchsias, in bloom	$10 00
Frank Kunz	Sacramento	Display bouquets	$10 00
Frank Kunz	Sacramento	Display hanging baskets	$5 00
F. A. Ebel	Sacramento	Ornamental foliage plants	$20 00
F. A. Ebel	Sacramento	New and rare plants	$10 00
F. A. Ebel	Sacramento	Collection plants suitable for greenhouse, conservatory, and window culture	$15 00
Thomas O'Brien	Sacramento	Display cut flowers	$10 00
CLASS V.			
I. R. Jewell	Petaluma	Cheese, one year old and over	$10 00
I. R. Jewell	Petaluma	Cheese, under one year old	$10 00
I. R. Jewell	Petaluma	Largest and best display cheese	Diploma and $15
CLASS VI.			
Mrs. E. F. Aiken	Sacramento	Domestic brown bread	$5 00
W. F. Peterson	Sacramento	Four loaves baker's bread	$3 00
Henry Fisher	Sacramento	Soda biscuit	$2 00
Henry Fisher	Sacramento	Butter crackers	$2 00
Henry Fisher	Sacramento	Sweet crackers	$2 00
Henry Fisher	Sacramento	Boston crackers	$2 00
B. W. Wilder	Sacramento	One gallon canned syrup	Recommend $10
Mrs. H. Cronkite	Brighton	Twenty-five pounds firkin butter	$15 00
Mrs. W. H. Wright	Sacramento	Graham bread	Recom'd Prem
Mrs. W. H. Wright	Sacramento	Domestic corn bread	$5 00
Mrs. W. H. Wright	Sacramento	Display domestic bread	$10 00
James Askew	El Dorado	Twelve pounds roll butter	$15 00
Jennie L. Powers	Sacramento	Domestic white bread, wheat	$5 00
Jennie L. Powers	Sacramento	Domestic rye bread	$5 00
Jennie L. Powers	Sacramento	Biscuit	$2 00

SIXTH DEPARTMENT.

FRUITS, PRESERVES, WINES, ETC.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
P. H. Murphy	Brighton	Green figs	$5 00
W. H. Jessup	Haywards	Three varieties apples	$10 00

Sixth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
W. H. Jessup	Haywards	Six varieties pears	$20 00
J. Lyon	Placerville	One variety peaches (orange cling)	$5 00
Robert Williamson	Penryn	Display pears	$30 00
Robert Williamson	Penryn	Three varieties pears	$10 00
Robert Williamson	Penryn	Display peaches	$25 00
Robert Williamson	Penryn	Six varieties peaches	$10 00
Robert Williamson	Penryn	Display plums	$20 00
Robert Williamson	Penryn	Five varieties plums	$10 00
Robert Williamson	Penryn	Display tropical fruit	$40 00
Robert Williamson	Penryn	Greatest number oranges	$10 00
Robert Williamson	Penryn	Greatest number lemons	$10 00
Robert Williamson	Penryn	Display fruit, by producer	$30 00
John Bidwell	Chico	Display apples	$30 00
John Bidwell	Chico	Six varieties apples	$20 00
John Bidwell	Chico	One variety plums (Pettie)	$5 00
CLASS II.			
Mrs. H. Cronkite	Brighton	One dozen jars strawberry jelly, in glass	$5 00
Mrs. H. Cronkite	Brighton	Six jars black currant jelly	$5 00
Mrs. H. Cronkite	Brighton	Nine jars quince jelly	$5 00
Mrs. H. Cronkite	Brighton	Six jars blackberry jelly	$5 00
Mrs. H. Cronkite	Brighton	Six jars blackberry jam	$5 00
Mrs. H. Cronkite	Brighton	Six jars raspberry jam	$5 00
Mrs. H. Cronkite	Brighton	Six jars apple jelly	Recommend $5
Mrs. Wm. Bassett	Sacramento	Variety fruit, in glass (display)	$10 00
Mrs. Wm. Bassett	Sacramento	Six jars red currant jelly	$5 00
CLASS III.			
A. D. Miller	Brighton	Soft shell almonds	$5 00
W. H. Jessup	Haywards	Twenty-five lbs. dried prunes	$5 00
W. H. Jessup	Haywards	Twenty-five lbs. dried apricots	$5 00
W. H. Jessup	Haywards	Twenty-five lbs. dried nectarines	$5 00
P. J. Isbell	Placerville	General display dried fruit	$20 00
Joseph Purrington	Brighton	Twenty-five lbs. dried apples	$5 00
Joseph Purrington	Brighton	Twenty-five lbs. dried peaches	$5 00
Joseph Purrington	Brighton	Twenty-five lbs. dried plums	$5 00
Joseph Purrington	Brighton	Twenty-five lbs. dried pears	$5 00
GRAPES, BRANDY, WINE, ETC.			
R. S. Lockett	Brighton	Raisin grapes	$20 00
J. Rutter	Florin	Display raisins	$25 00
J. Rutter	Florin	Display seedless raisins	Diploma and $10
Mrs. Robert Chalmers	Coloma	One dozen bottles grape brandy	$20 00
Mrs. Robert Chalmers	Coloma	One dozen bottles white wine, Hungarian	$20 00
Mrs. Robert Chalmers	Coloma	One dozen bottles dry red wine	$20 00
Mrs. Robert Chalmers	Coloma	One dozen bottles sweet wine	$20 00
Mrs. Robert Chalmers	Coloma	One dozen bottles sherry wine	$20 00
Mrs. Robert Chalmers	Coloma	One dozen bottles Burgundy sweet wine	Prem. (not in list)
Johnston Wine and Br. Co.	Sacramento	One dozen bottles port wine	$20 00
R. S. Lockett	Brighton	Twelve varieties wine grapes	$20 00
R. S. Lockett	Brighton	Six varieties wine grapes	$10 00
R. S. Lockett	Brighton	Three varieties wine grapes	$5 00
R. S. Lockett	Brighton	Best and greatest variety grapes	$25 00
P. H. Murphy	Brighton	Best six varieties table grapes	$20 00
Mrs. H. Cronkite	Brighton	Best three varieties table grapes	$10 00
MISCELLANEOUS DEPARTMENT.			
R. Wheeler	Sacramento	Cannery for preserving fruit, meat, etc.	Silver medal
Capital Packing Co.	Sacramento	Display canned fruit and meat	Silver medal
McGregor Bros.	Sacramento	One dozen cantaloupes	Fav. mention
McGregor Bros.	Sacramento	Variety of watermelons	Fav. mention

Sixth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Wilmerding & Co.	San Francisco	Display of Peruvian bitters	Fav. mention
John M. Hooper	San Francisco	Robinson's self-adjusting hammock chair	Rec. diploma
Bidwell & Cook	Sacramento	Display of teas and groceries	Diploma
George Uhl	Sacramento	Brush dam and levee protector	See special rep.
Henry Fisher	Sacramento	Ninety-four tins and fifty boxes crackers	Fav. mention
Mrs. G. W. Lorenz	Sacramento	Jelly cake and brown stone fruit cake	Fav. mention
Mrs. G. W. Lorenz	Sacramento	Breakfast muffins	Fav. mention
Mrs. G. W. Lorenz	Sacramento	Graham jems	Fav. mention
Spruance, Stanley & Co.	San Francisco	African stomach bitters	Diploma
C. W. Hoit	Sacramento	Fruit tree grafting machine	Diploma
B. N. Bugby	Sacramento	Model of drawbridge	Special mention
B. N. Bugby	Sacramento	Bugby & Wible patent vehicle axle	Fav. mention
Buell & Roberts	Sacramento	Bed springs	Fav. mention
G. W. Yount	Dixon	Display of olive oil	Silver medal
Mrs. Robert Chalmers	Coloma	One dozen Chalmers' catawba wine bitters	Fav. mention
Mrs. Robert Chalmers	Coloma	Blackberry cordial	Fav. mention
Mrs. Robert Chalmers	Coloma	Blackberry brandy	Diploma
Truman S. Clark & Son	San Francisco	Gas-pipe iron bedstead, with mattress attached	Diploma
G. W. Chesley & Co.	Sacramento	Maple rum	Diploma rec
G. W. Chesley & Co.	Sacramento	Rock and rye	Diploma rec
G. W. Chesley & Co.	Sacramento	Cundurango bitters	Fav. mention
B. F. Wellington	San Francisco	Improved egg food	Special mention
James H. Lawrence	Sacramento	Display of fancy tin ware	Fav. mention

SEVENTH DEPARTMENT.

FINE ARTS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Mrs. E. B. Crocker	Sacramento	Exhibit oil paintings, statuary, bronzes, mosaics, etc.	Not exhibited for competition. Vote of thanks tendered by the Board for free and liberal exhibit.
DISTRIBUTION OF $600.			
Ella N. Bartholomew	Placerville	Four oil paintings	$30 00
Theo. Wores	San Francisco	Oil painting—"Juliet"	$20 00
Thomas Hill	San Francisco	Three oil paintings	$60 00
A. D. Cooper	San Francisco	Two oil paintings	$30 00
A. D. Cooper	San Francisco	Twenty-nine Indian heads	$15 00
Mrs. Wm. Irelan	San Francisco	Paintings in oil or water colors	$40 00
G. J. Denny	San Francisco	Oil painting	$25 00
Jules Tavernier	San Francisco	Oil painting	$10 00
Nellie Hopps	San Francisco	Four oil paintings	$14 00
J. A. Stanton	San Francisco	Four oil paintings	$18 00
S. M. Brookes	San Francisco	Four oil paintings	$14 00
L. P. Latimer	San Francisco	Four oil paintings	$20 00

SEVENTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
H. Raschen	San Francisco	Three oil paintings	$20 00
Wm. Keith	San Francisco	Eight oil paintings	$80 00
Norton Bush	Sacramento	Thirteen oil paintings	$60 00
A. Silva	New York	One oil painting	$10 00
Miss C. E. Usher	Haywards	Two oil paintings	$15 00
Mrs. E. Keith	San Francisco	Eight oil paintings	$8 00
Mrs. C. W. Reed	Washington	One oil painting	$8 00
May I. Briggs	Davisville	One oil painting	$5 00
W. F. Jackson	Sacramento	Five oil paintings	$43 00
W. F. Jackson	Sacramento	One crayon drawing	
Mrs. Wm. Beckman	Sacramento	One oil painting	$5 00
Miss Polly Barker	Sacramento	One oil painting	$5 00
C. H. Klippel	Sacramento	Four crayon drawings	$10 00
Lillie B. Cutter	Sacramento	Three crayon drawings	$5 00
L. O. Lussier	Sacramento	Two oil paintings	$20 00
Miss Addie L. Hughes	Sacramento	Four crayons	$10 00
CLASS II.			
DISTRIBUTION OF $50.			
J. A. Todd	Sacramento	Photographs	$17 50
J. R. Hodson	Sacramento	Photographs	$17 50
J. Leftwich	Sacramento	Photographs	$10 00
J. Boysen	Colusa	Photographs	$5 00

GOLD MEDALS AWARDED.

FIRST DEPARTMENT.

To J. B. Haggin, for the most meritorious exhibit of live stock.

SECOND DEPARTMENT.

To Benicia Agricultural Works, for their exhibit of machinery.

THIRD DEPARTMENT.

To the Capital Woolen Mills, for their exhibit of woolen goods.

FOURTH DEPARTMENT.

To Billingsley & Co., for their exhibit of wood and willow ware.

FIFTH DEPARTMENT.

To John Bidwell, for his exhibit of grain.

SIXTH DEPARTMENT.

To Robert Williamson, for his exhibit of green fruits.

SEVENTH DEPARTMENT.

To William Keith, for his exhibit of oil paintings.

RAINFALL AND WEATHER REVIEW.

RAINFALL FOR THE WINTER SEASONS.

The following tabulated statement shows the rainfall and number of days that rain fell for each Winter month; also, the total rainfall and total number of days that rain fell during the entire Winter seasons; the Winter seasons beginning with the Winter of 1852–3, and ending with the Winter of 1881–2. The three Winter months composing the Winter season that gave the heaviest rainfall was during the Winter of 1861–2—27.94 inches. The driest Winter was that of 1863–4—3.08 inches. The mean average rainfall for the Winter season for the past thirty years was 11.923 inches, showing the season of 1861–2 was 16.017 inches in excess of a thirty years' average, and the dry season of 1863–4 was 8.843 inches less than the average. We might judge from this that we should never have a Winter season of over 28 inches, or one of less than 3 inches of rainfall:

WINTER OF—	DECEMBER.		JANUARY.		FEBRUARY.		Total for Winter Months.	Total No. Days for Winter.
	Inches.	No. of Days.	Inches.	No. of Days.	Inches.	No. of Days.		
1853	13.41	20	3.00	12	2.00	6	18.41	38
1854	1.54	4	3.25	6	8.50	14	13.29	24
1855	1.15	8	2.67	15	3.46	7	7.28	30
1856	2.00	13	4.92	16	.69	6	7.61	35
1857	2.40	13	1.38	14	4.80	17	8.58	44
1858	2.63	13	2.45	21	2.46	13	7.54	47
1859	4.34	17	.96	19	3.91	18	9.21	54
1860	1.84	17	2.31	15	.93	14	5.08	46
1861	4.28	20	2.67	10	2.92	9	9.87	39
1862	8.64	22	15.04	20	4.26	11	27.94	53
1863	2.33	11	1.73	10	2.75	11	6.81	32
1864	1.81	10	1.08	7	.19	2	3.08	19
1865	7.87	16	4.78	13	.71	6	13.36	35
1866	.36	9	7.70	18	2.01	11	10.07	38
1867	9.51	21	3.44	15	7.10	9	20.05	45
1868	12.85	18	6.04	17	3.15	9	22.04	44
1869	2.61	11	4.79	14	3.63	5	11.03	30
1870	1.96	7	1.37	9	3.24	11	6.57	27
1871	.97	6	2.08	8	1.92	11	4.97	25
1872	10.59	22	4.04	11	4.74	18	19.37	51
1873	5.39	13	1.23	10	4.36	17	10.98	40
1874	10.01	21	5.20	14	1.86	9	17.07	44
1875	.44	17	8.71	14	.55	2	15.70	33
1876	5.52	14	4.99	13	3.75	10	14.26	37
1877	--------	--------	2.77	11	1.04	9	3.81	20
1878	1.43	5	9.26	17	8.04	17	18.73	39
1879	.47	3	3.18	11	3.88	9	7.53	[illegible]
1880	3.41	12	1.64	7	1.83	10	6.88	29
1881	11.81	21	6.14	9	5.06	13	28.01	43
1882	3.27	11	1.89	8	2.40	6	7.56	25
Mean	4.495	13.2	4.024	12.8	3.205	10.3	11.723	36.3

MEAN SPRING RAINFALL.

The table below will be found to contain the record of rainfall and number of days rain fell during the Spring months and for the Spring season. It informs us that the wettest Spring season was that of 1880—16.66 inches; and the driest was that of 1857—.68 of an inch; the mean average for thirty years being 5.058 inches, showing a deficiency of nearly 5 inches in the dry season of 1857, and an excess of 11.602 inches during the wet Spring of 1880, as compared with a thirty years' average:

Spring of—	March.		April.		May.		Total for Spring Months.	Total No. Days for Spring.
	Inches.	No. of Days.	Inches.	No. of Days.	Inches.	No. of Days.		
1853	7.00	8	3.50	7	1.45	4	11.95	19
1854	3.25	4	1.50	9	.21	4	4.96	17
1855	4.20	9	4.32	9	1.15	6	9.67	24
1856	1.41	5	2.13	8	1.84	4	5.38	17
1857	.68	10	Sprink	1	Sprink	3	.68	14
1858	2.88	13	1.21	3	.20	4	4.29	20
1859	1.64	14	.98	6	1.04	4	3.66	24
1860	5.11	17	2.88	8	2.49	10	10.48	5
1861	3.32	7	.48	4	.59	3	4.39	14
1862	2.80	15	.82	9	1.81	9	5.43	33
1863	2.36	10	1.69	9	.36	2	4.41	21
1864	1.30	12	1.08	4	.74	8	3.12	24
1865	.48	7	1.37	3	.46	2	2.31	12
1866	2.02	11	.48	6	2.25	5	4.75	22
1867	1.01	6	1.80	7	.01	1	2.82	14
1868	4.35	12	2.31	9	.27	2	6.93	23
1869	2.94	12	1.24	5	.65	2	4.83	19
1870	1.64	6	2.12	7	.27	1	4.03	14
1871	.69	8	1.45	6	.76	5	2.90	19
1872	1.94	10	.61	6	.28	3	2.83	19
1873	.55	4	.51	4	--------	--------	1.06	8
1874	3.05	10	.89	10	.37	6	4.31	26
1875	.80	9	Sprink	3	Sprink	1	.83	13
1876	4.15	13	1.10	10	.15	4	5.40	27
1877	.56	7	.19	7	.64	6	1.39	20
1878	3.09	14	1.07	3	.17	4	4.33	21
1879	4.88	14	2.66	12	1.30	5	8.84	31
1880	1.70	7	14.20	15	.76	3	16.66	25
1881	1.37	6	1.64	6	Sprink	1	3.01	13
1882	3.78	10	1.99	8	.35	1	6.12	19
Mean	2.498	9.7	1.874	6.8	.686	3.8	5.058	20.2

MEAN SUMMER RAINFALL.

In the recorded statement below will be found the rainfall for each month of our dry or Summer season; also the total for the season, as well as the total number of days, etc., that rain fell. The average for the thirty years past is .132 of an inch. The Summer season that gives the most rainfall was that of 1861—.68 of an inch. The driest were 1853, 1863, 1867, 1868, 1870, 1871, 1874, 1877, 1880, only a sprinkle. But one season of the thirty gave none, that being 1878:

SUMMER OF—	JUNE.		JULY.		AUGUST.		Total for Summer Months.	Total No. Days for Summer.
	Inches.	No. of Days.	Inches.	No. of Days.	Inches.	No. of Days.		
1853	Sprink	1	Sprink	2	--------	--------	Sprink	3
1854	.31	2	--------	--------	Sprink	1	.31	3
1855	.01	1	--------	--------	--------	--------	.01	1
1856	.03	1	--------	--------	--------	--------	.03	1
1857	.35	2	--------	--------	Sprink	1	.35	3
1858	.10	2	.01	1	Sprink	4	.11	7
1859	--------	--------	--------	1	--------	--------	--------	1
1860	.02	2	.03	--------	--------	--------	.05	2
1861	.13	4	.55	3	--------	--------	.68	7
1862	.01	1	--------	--------	.01	1	.02	2
1863	--------	--------	--------	--------	Sprink	2	Sprink	2
1864	.09	3	--------	--------	.08	6	.17	6
1865	--------	--------	Sprink	3	--------	--------	--------	3
1866	.10	2	.02	3	--------	--------	.12	5
1867	Sprink	1	Sprink	1	Sprink	1	Sprink	3
1868	Sprink	3	--------	--------	--------	--------	Sprink	3
1869	.01	1	--------	--------	--------	--------	.01	1
1870	Sprink	1	Sprink	1	Sprink	1	Sprink	3
1871	Sprink	1	--------	--------	--------	--------	Sprink	1
1872	.02	1	--------	--------	Sprink	2	.02	3
1873	Sprink	1	.02	2	Sprink	1	.02	4
1874	Sprink	2	Sprink	1	--------	--------	Sprink	3
1875	1.10	2	--------	--------	--------	--------	1.10	2
1876	--------	--------	.21	2	.02	1	.23	3
1877	.01	1	Sprink	1	Sprink	1	.01	3
1878	--------	--------	--------	--------	--------	--------	--------	--------
1879	.13	1	Sprink	1	Sprink	1	.13	3
1880	--------	--------	Sprink	1	--------	--------	Sprink	1
1881	.50	2	Sprink	1	--------	--------	.50	3
1882	.10	1	Sprink	1	--------	--------	.10	2
Mean	.101	1.3	.028	.08	.04	.07	.133	2.8

MEAN AUTUMNAL RAINFALL.

The table following shows the seasonal rainfall by months and total for the season, both of rainfall and number of days rain fell, for the last thirty years, the wettest being the Fall season of 1864, 6.84 inches; the driest being that of 1880—.05 of an inch; the mean average for thirty years being 2.666 inches; a deficiency in 1880 of 2.616 inches over the average, while the season of 1864 gave 4.174 inches in excess of the thirty years' average:

FALL OF—	SEPTEMBER.		OCTOBER.		NOVEMBER.		Total for Autumn Months.	Total No. Days for Autumn.
	Inches.	No. of Days.	Inches.	No. of Days.	Inches.	No of Days.		
1853	Sprink	1	Sprink	1	1.50	5	1.50	7
1854	Sprink	1	1.01	11	.65	2	1.66	14
1855	Sprink	1	--------	--------	.76	9	.76	10
1856	Sprink	1	.20	6	.65	10	.85	17
1857	--------	--------	.65	3	2.41	10	3.07	13
1858	Sprink	5	3.01	5	.15	11	3.16	21
1859	.02	3	--------	--------	6.49	15	6.51	18
1860	.06	2	.92	9	.18	5	1.16	16
1861	--------	--------	Sprink	1	2.17	12	2.17	13
1862	--------	--------	.36	6	Sprink	2	.36	8
1863	Sprink	1	--------	--------	1.49	7	1.49	8
1864	Sprink	1	.12	2	6.72	9	6.84	12
1865	.08	4	.48	5	2.43	9	2.99	18
1866	Sprink	1	Sprink	1	2.43	8	2.43	10
1867	.01	1	Sprink	1	3.81	6	3.82	8
1868	--------	--------	Sprink	3	.77	5	.77	8
1869	Sprink	1	2.12	2	.85	5	2.97	6
1870	--------	--------	.02	2	.58	6	.60	8
1871	Sprink	1	.21	1	1.22	8	1.43	10
1872	Sprink	2	.22	2	1.93	4	2.15	8
1873	--------	--------	.31	4	1.21	5	1.52	9
1874	.05	1	2.26	8	3.80	9	6.11	18
1875	--------	--------	.44	4	6.20	10	6.64	14
1876	--------	--------	3.45	7	.30	1	3.75	8
1877	--------	--------	.73	5	1.07	7	1.80	12
1878	.29	3	.55	1	.51	3	1.35	7
1879	--------	--------	.88	4	2.05	8	2.93	12
1880	--------	--------	--------	--------	.05	2	.05	2
1881	.30	1	.55	6	1.88	4	2.73	11
1882	.57	2	2.63	6	3.22	7	6.42	15
Mean	.046	1.1	.704	3.5	.916	6.8	2.666	11.4

YEARLY AND SEASONAL RAINFALL, ETC.

The instructive tabulated information below gives the rainfall annually—that is, from January to December of each year—for thirty years. Also, the rainfall by seasons, beginning with September 1st of one year and ending with August 31st of the next year, the wettest season being 1861–2—35.36 inches; the driest that of 1863–4—7.86 inches; the wettest calendar year being 1880—31.99 inches; the driest being 1877—8.43 inches; the mean average seasonal rainfall for twenty-nine years being 18.988 inches; the mean average for the year, or the mean annual average, being 19.209 inches. The difference between the mean average rainfall, calculating from January 1st to December 31st of each year, and from September 1st of one year to August 31st of next year, is only .221 of an inch in favor of the calendar year:

YEAR OF—	Yearly Rainfall.	Total No. of Days Rain Fell.	Season of—	Rainfall—Inches.	Total No. of Days.
1853	19.99	51			
1854	19.83	62	1853–54	20.06	51
1855	18.57	70	1854–55	18.62	69
1856	14.27	70	1855–56	13.78	63
1857	12.91	74	1856–57	10.46	78
1858	16.81	99	1857–58	15.01	87
1859	16.91	97	1858–59	16.06	100
1860	19.18	102	1859–60	22.09	101
1861	21.47	75	1860–61	16.10	76
1862	27.44	85	1861–62	35.56	100
1863	12.19	63	1862–63	11.58	64
1864	19.27	67	1863–64	7.86	57
1865	11.16	61	1864-65	22.56	62
1866	26.52	87	1865–66	17.93	83
1867	30.03	67	1866–67	25.30	72
1868	19.50	71	1867–68	32.79	78
1869	18.19	54	1868–69	16.64	58
1870	10.21	51	1869–70	13.57	52
1871	18.92	71	1870–71	8.47	53
1872	19.17	72	1871–72	23.65	83
1873	18.20	69	1872–73	14.21	60
1874	17.92	87	1873–74	22.90	82
1875	23.32	68	1874–75	17.71	71
1876	18.12	61	1875–76	26.53	75
1877	8.43	59	1876–77	8.95	54
1878	23.45	65	1877–78	24.86	72
1879	22.37	78	1878–79	17.85	64
1880	31.99	66	1879–80	26.47	67
1881	20.71	78	1880–81	26.57	61
1882	18.06	58	1881–82	16.51	57
Mean	* 19.170	9.03	† Mean.	18.988	70.7

* Mean for thirty years. † Mean for twenty-nine seasons.

RAINFALL FOR THIRTY-TWO YEARS.

In compliance with request the following interesting and valuable table of the rainfall at Sacramento for thirty-two years, or thirty-three "seasons," last past, compiled by Sergeant Barwick, United States Signal Corps, at this station, and heretofore given by the Record-Union, is republished with additional data, including September 1, 1882. The data for the years from 1849 to 1862 were obtained from records kept by the late Dr. T. M. Logan; from 1863 to June 30, 1877, from observations and records of Dr. F. W. Hatch; and the remaining years from the Signal office. The average rainfall for the thirty-two calendar years, computing the years from January 1st, was 19.28 inches, and for the thirty-three seasons, computing from September 1st to the same date of the following year, the average was 19.65 inches—only a difference of .37 of an inch from the former:

Year	January	February	March	April	May	June	July	August	September	October	November	December	Total for year	Season of	Inches
1849	------	------	------	------	------	------	------	------	.25	1.50	2.25	12.50	------	1849-50	36.00
1850	4.50	.50	10.00	4 25	.25	------	------	------	------	------	sprin	sprin	19.50	1850-51	4.71
1851	.65	.35	1 88	1.14	.60	------	------	------	1.00	.18	2.14	7.07	15.10	1851-52	17.98
1852	.58	.12	6.40	.19	.30	------	------	------	sprin	------	6.00	13.41	27.00	1852-53	36.36
1853	3.00	2.00	7.00	3.50	1.45	sprin	sprin	------	sprin	sprin	1.50	1.54	19.99	1853-54	20.06
1854	3.25	8.50	3.25	1.50	.21	.31	------	sprin	sprin	1.01	.65	1.15	18.82	1854-55	18.62
1855	2.67	3.46	4.20	4.32	1.15	.01	------	------	sprin	------	.75	2.00	18.56	1855-56	13.76
1856	4.92	.69	1.40	2.13	1.84	.03	------	------	sprin	.19	.65	2.40	14.25	1856-57	10.43
1857	1.37	4.80	.67	sprin	sprin	.35	------	sprin	------	.65	2.41	2.63	12.88	1857-58	15.00
1858	2.44	2.46	2.88	1.21	.20	.10	.01	sprin	sprin	3 01	.15	4.34	16.80	1858-59	16.03
1859	.96	3.91	1.64	.98	1.04	------	------	------	.02	------	6.48	1.83	16.86	1859-60	22.09
1860	2.31	.93	5.11	2 87	2.49	.02	.03	------	.06	.91	.18	4.28	19.19	1860-61	16.08
1861	2.67	2.92	3.32	.47	.59	.13	.55	------	------	sprin	2.17	8.64	21.36	1861-62	35.55
1862	15.04	4.26	2.80	.82	1.81	.01	------	.01	------	.35	sprin	2.33	27.43	1862-63	11.57
1863	1.73	2.75	2.36	1.69	.35	------	------	------	sprin	------	1.49	1.81	12 18	1863-64	7.86
1864	1.08	.19	1.30	1.08	.74	.09	------	.08	sprin	.12	6.72	7.87	19.27	1864-65	22.51
1865	4.78	.71	.48	1.37	.46	------	sprin	------	.08	.48	2.43	.36	11.15	1865-66	17.93
1866	7.70	2.01	2.02	.48	2 25	.10	.02	------	------	sprin	2.43	9.51	26.52	1866 67	25.30
1867	3.44	7.10	1.01	1.80	.01	------	------	------	.01	------	3.81	12.85	30.03	1867-68	32.79
1868	6.04	3.15	4.35	2 31	.27	sprin	------	------	------	------	.77	2.61	19 50	1868-69	16 64
1869	4.79	3.63	2 94	1.24	.65	.01	------	------	sprin	2.12	.85	1.96	18.19	1869-70	13.57
1870	1.37	3.24	1.64	2.12	.27	sprin	sprin	sprin	------	.02	.58	.97	10.21	1870-71	8.46
1871	2.07	1.92	.69	1.45	.76	sprin	------	------	sprin	.21	1.22	10.59	18.91	1871-72	23.65
1872	4.04	4.74	1.94	.61	.28	.02	------	------	sprin	.22	1.93	5.39	19.17	1872-73	14.20
1873	1.23	4.37	.55	.51	------	sprin	.01	sprin	------	31	1.21	10.01	18.20	1873-74	22.90
1874	5.20	1.86	3.65	.89	.37	sprin	sprin	------	.05	2 26	3.80	.44	17.92	1874-75	17.70
1875	8.70	.55	.80	sprin	sprin	1.10	------	------	------	.44	6.20	5.52	23.31	1875-76	26.53
1876	4.99	3.75	4.15	1.10	.15	------	.21	.02	sprin	3.45	.30	------	18.12	1876-77	8.96
1877	2.77	1.04	.56	.19	.64	.01	sprin	sprin	------	.73	1.07	1.43	8.44	1877-78	24.86
1878	9.26	8.04	3.09	1.07	.17	------	------	------	.29	.55	.51	.47	23 45	1878-79	17.85
1879	3.18	3.88	4.88	2.66	1.30	.13	sprin	sprin	------	.88	2.05	3.41	22.37	1879-80	26.47
1880	1.64	1 83	1.70	14.20	.76	------	sprin	------	------	------	.05	11.81	31.99	1880-81	26 57
1881	0.14	5.06	1.37	1.64	sprin	.50	sprin	------	.30	.55	1.88	3 27	20.71	1881-82	16.51
1882	1.89	2.40	3.78	1.99	.35	.10	sprin	------	.57	2.63	3.22	1.13	18.06	------	------

MEAN WINTER TEMPERATURE.

The tabulated statement below shows the mean temperature by months, and for the season also, of the Winter seasons, beginning with the season of 1853-4 and ending with the one of 1881-2; also showing a mean average for twenty-nine years. Judging from the temperature for each season, we must conclude that the season of 1879-80 was the coldest—44.5°, the warmest being the season of 1881—51.0°; the mean average of twenty-nine years being 48.3°, showing that the coldest season was 3.8° below the mean average, and the warmest being 2.7° above the mean average for twenty-nine years:

Winter Season of—	Mean Temp.—December.	Mean Temp.—January.	Mean Temp.—February.	Mean Winter Temperature.
1854	48.0	43.0	51.0	47.3
1855	47.9	43.7	52.5	48.0
1856	46.0	48.0	52.6	48.9
1857	43.9	48.5	50.2	47.5
1858	47.4	45.0	52.2	48.2
1859	44.5	44.9	50.5	46.6
1860	43.5	46.2	49.8	46.5
1861	49.3	47.1	52.2	49.5
1862	50.9	46.4	47.5	48.3
1863	46.4	46.9	48.0	47.1
1864	46.5	49.2	53.6	49.7
1865	50.2	47.4	49.0	48.9
1866	44.1	46.5	63.5	48.0
1867	50.2	48.2	47.8	48.7
1868	46.8	47.0	50.5	48.1
1869	47.0	47.6	49.9	48.2
1870	46.5	48.6	51.1	48.7
1871	45.5	48.3	49.4	47.7
1872	48.7	48.5	53.3	50.0
1873	49.0	52.7	48.2	50.2
1874	47.7	45.7	49.3	47.6
1875	45.0	46.9	52.7	48.2
1876	48.0	48.8	50.2	49.0
1877	45.5	49.1	55.0	49.9
1878	48.6	49.7	51.3	49.9
1879	47.2	45.5	55.0	49.2
1880	44.0	43.5	46.0	47.5
1881	50.3	49.2	53.5	51.0
1882	46.2	45.1	46.3	45.9
Mean	47.1	47.1	50.8	48.3

MEAN SPRING TEMPERATURE.

The table below will be found to contain the mean temperature by months for the Spring season, also for the season. The warmest one, as indicated by its mean temperature, was 1853—62.9°; the coldest, 1860—56.5°; the mean average Spring temperature being 59.5°; the warmest, 1853, being 3.4° above the mean average; the coldest, 1860, being 3° below the mean average for the past thirty years:

SPRING SEASON OF—	Mean Temp.—March.	Mean Temp.—April.	Mean Temp.—May.	Mean Spring Temperature.
1853	59.8	61.0	68.0	62.9
1854	53.0	60.0	62.0	58.3
1855	54.8	58.1	60.2	57.7
1856	57.0	58.8	63.9	59.9
1857	56.4	63.3	65.5	61.7
1858	53.7	59.8	65.2	59.6
1859	51.5	57.1	63.0	57.2
1860	53.3	57.8	58.5	56.5
1861	55.0	60.6	63.7	59.8
1862	53.6	58.0	61.2	57.6
1863	57.6	59.5	67.1	61.4
1864	56.1	62.1	68.5	62.2
1865	53.6	59.3	70.2	61.0
1866	54.2	61.9	63.1	59.7
1867	50.7	59.7	64.4	58.3
1868	55.0	60.1	64.2	59.8
1869	53.6	59.0	64.2	58.9
1870	53.0	57.0	61.0	57.0
1871	56.0	59.2	61.5	58.9
1872	56.8	57.6	67.0	60.5
1873	56.8	60.0	67.9	61.6
1874	52.9	59.5	64.7	59.0
1875	53.7	63.0	68.1	61.6
1876	54.6	59.5	65.7	59.9
1877	59.0	60.2	64.5	61.2
1878	56.7	59.4	65.5	60.5
1879	57.4	60.3	60.2	59.3
1880	48.8	54.6	61.6	55.0
1881	55.5	60.8	64.8	64.4
1882	53.0	55.8	64.0	57.6
Mean	54.8	59.4	64.3	59.5

MEAN SUMMER TEMPERATURE.

The mean temperature in the following table is for the Summer months and for the Summer season, showing by their mean temperature that 1866 was the warmest—74.8°; and the coldest to have been 1861—69.8°; the mean average for thirty years is 71.8°; the season of 1866 being 3° above the mean average, and 1861 being 2° below the mean average for the past thirty years. It also appears that the mean average temperature for the past thirty years for June, July, and August was in the seventies, which gives us to understand that the three Summer months are usually of even degrees of temperature, with July a little the warmest of the three Summer months:

SUMMER SEASON OF—	Mean Temp.—June.	Mean Temp.—July.	Mean Temp.—August.	Mean Summer Temperature.
1853	77.0	75.0	71.0	74.3
1854	67.0	80.6	69.5	72.4
1855	71.1	72.5	73.0	72.2
1856	71.1	75.1	69.6	71.9
1857	71.9	71.4	71.3	71.5
1858	69.4	70.8	70.6	70.3
1859	74.8	69.1	67.2	70.4
1860	65.6	73.2	73.5	70.8
1861	66.2	73.6	69.7	69.8
1862	69.3	73.2	75.0	72.5
1863	69.1	75.6	70.7	71.8
1864	71.1	74.8	74.7	73.5
1865	73.5	74.0	71.7	73.1
1866	72.2	76.2	76.0	74.8
1867	70.3	73.7	71.7	71.9
1868	69.5	73.8	71.2	71.5
1869	70.8	74.3	71.3	72.2
1870	69.3	71.8	72.6	71.2
1871	70.1	70.2	72.0	70.8
1872	69.2	71.4	73.1	71.6
1873	71.7	73.2	66.3	70.4
1874	70.2	72.8	70.9	71.3
1875	70.6	73.3	72.5	72.1
1876	76.9	74.0	72.8	74.6
1877	72.5	75.0	72.9	73.5
1878	71.8	73.4	73.4	72.9
1879	72.1	71.8	74.7	72.9
1880	66.6	70.9	69.7	69.1
1881	66.0	71.1	68.2	68.5
1882	68.1	73.4	71.9	71.1
Mean	70.5	73.3	71.6	71.8

MEAN AUTUMN TEMPERATURE.

The mean temperature for the Fall season indicates the Fall of 1853 as being the warmest, it being 69.0; that of 1881 was the coldest, judging from the mean temperature, it being 59.9. The average mean temperature for thirty years past being 61.6, showing the average of 1853 to have been 7.4 above the mean average, and that of 1881 to have been 1.7 below the mean average temperature for the past thirty years:

Fall Season of—	Mean Temp.—September.	Mean Temp.—October.	Mean Temp.—November.	Mean Autumn Temperature.
1853	76.0	78.0	53.0	69.0
1854	65.0	60.0	55.0	60.0
1855	68.0	63.0	50.6	60.5
1856	70.9	58.0	52.2	60.4
1857	67.9	61.5	53.2	60.9
1858	68.9	59.5	54.2	69.9
1859	65.9	63.3	54.0	61.1
1860	67.6	59.8	53.5	60.3
1861	67.8	59.9	53.6	60.4
1862	70.4	67.6	53.1	63.7
1863	69.0	62.8	52.7	61.5
1864	69.8	64.5	53.5	62.6
1865	68.8	63.1	56.9	62.9
1866	72.2	65.2	53.8	63.7
1867	68.8	62.7	54.8	62.1
1868	68.3	62.0	53.9	61.4
1869	69.9	63.1	54.0	62.3
1870	68.0	63.6	53.4	61.7
1871	67.4	62.2	50.2	59.9
1872	68.8	58.9	51.2	59.6
1873	69.9	61.4	57.5	62.9
1874	70.7	61.7	53.9	62.1
1875	55.7	69.9	56.7	60.8
1876	70.1	63.5	53.3	62.3
1877	72.7	62.9	54.7	63.4
1878	69.0	62.9	55.5	62.5
1879	70.4	61.5	50.9	60.9
1880	68.0	62.1	49.7	59.9
1881	67.8	56.8	50.8	58.5
1882	68.4	58.4	49.5	58.8
Mean	68.7	62.7	53.3	61.6

MEAN ANNUAL AND SEASONAL TEMPERATURES.

The statement below shows the mean temperature, for each year, for twenty-nine years, and for the four seasons of each year for the past thirty years. The coldest year, inferring from the mean temperature, was that of 1880—57.5°; the warmest was 1864—62.8°.; the mean average for the past twenty-nine years being 60.4°, showing the coldest to have been 2.9° below the mean average, while the warmest year being that of 1864, when it was 2.4° above the mean average for twenty-nine years. By careful study of the following table one is struck by the slight difference between the coldest and warmest year, as compared with a thirty years' average, generally not more than 3°. That is, we might safely say that the mean temperature of any year is not likely to vary more than 3° from 60°, either way, between the hottest and coldest year, as compared with the mean average temperature for the past twenty-nine years:

YEAR.	Mean Annual Temperature.	Mean Spring Temperature.	Mean Summer Temperature.	Mean Autumn Temperature.	Mean Winter Temperature.
1853	62.6	62.9	74.3	69.0	*
1854	59.5	58.3	72.4	60.0	47.3
1855	59.5	57.7	72.2	60.5	48.0
1856	60.1	59.9	71.9	60.4	48.9
1857	60.7	61.7	71.5	60.9	47.5
1858	59.5	59.6	70.3	60.9	48.2
1859	58.7	57.2	70.4	61.1	46.6
1860	59.0	56.5	70.8	60.3	46.5
1861	60.1	59.8	69.8	60.4	49.5
1862	60.2	57.6	72.5	63.7	48.3
1863	60.3	61.4	71.8	61.5	47.1
1864	62.8	62.2	73.5	62.6	49.7
1865	61.0	61.0	73.1	62.9	48.9
1866	62.1	59.7	74.8	63.7	48.0
1867	59.9	58.3	71.9	62.1	48.7
1868	60.1	59.8	71.5	61.4	48.1
1869	60.4	58.9	72.5	62.3	48.2
1870	59.6	57.0	71.2	61.7	48.7
1871	59.6	58.9	70.8	59.9	47.7
1872	60.4	60.5	71.6	59.6	50.2
1873	60.7	61.6	70.4	62.9	50.0
1874	59.8	59.0	71.3	62.2	47.6
1875	62.5	61.6	72.1	60.8	48.2
1876	61.7	59.9	74.6	62.3	49.0
1877	61.2	61.2	73.5	63.4	49.9
1878	61.3	60.2	72.9	62.5	49.9
1879	60.3	59.3	72.9	61.0	49.2
1880	57.7	55.0	69.1	59.9	44.5
1881	59.2	60.4	68.5	58.5	51.0
1882	†59.4	57.6	71.1	58.8	45.9
Mean	‡60.4	59.5	71.8	61.6	‡48.3

SUMMARY.

The following is the summary for the past twenty-nine and thirty years: Heaviest yearly rainfall, 31.99 inches, in 1880; heaviest seasonal rainfall, 35.56 inches, in 1862; smallest yearly rainfall, 8.43 inches, in 1877; smallest seasonal rainfall, 7.86 inches, in 1864; great-

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* The Winter temperatures are for the Winters from 1852-3 to 1881-2, both inclusive.

† Mean for eleven months.

‡ Mean for twenty-nine years.

est number of days rain fell in one year, 102, in 1860; greatest number of days rain fell in one seasonal year, 101, in 1859–60; least number of days rain fell in one year, 51, in 1870; least number of days rain fell in one seasonal year, 51, in 1853–4; highest annual mean temperature, 62.6°, in 1853; lowest annual mean temperature, 57.5°, in 1880.

The following table gives the mean annual barometer, thermometer, and hygrometer, the maximum and minimum temperature. The hygrometrical observations is the amount of moisture or relative humidity contained in the atmosphere, also the mean average for five years:

YEAR.	Mean Annual Barometer.	Mean Annual Relative Humidity.	Mean Annual Temperature.	Max. Yearly Temperature.	Min. Yearly Temperature.
1878	29.946	62.2	61.3	100.5—Aug.	23.5—Dec.
1879	29.998	65.7	60.3	103.0—Aug.	25.0—Dec.
1880	30.025	64.6	57.7	98.0—July	25.0—Jan.
1881	30.026	66.7	59.2	98.6—July	31.9—Dec.
1882	30.030	66.0	58.2	99.8—Aug.	27.0—Dec.
Mean average for 5 years	30.005	65.04	59.32	99.98	26.48

The Winter tables following this statement shows the mean Winter pressure, temperature, and relative humidity, the highest and lowest temperature for the Winter seasons of 1877–8 to 1881–2, and the mean average for five years:

WINTER OF—	Mean Winter Barometer.	Mean Winter Relative Humidity.	Mean Winter Temperature.	Max. Winter Temperature.	Min. Winter Temperature.
1877–78	30.004	77.1	49.9	67.0—Dec.	27.0—Jan.
1878–79	30.120	68.3	49.2	73.5—Feb.	23.5—Dec.
1879–80	30.163	77.2	44.5	64.0—Feb.	25.0 { Dec. Jan.
1880–81	30.116	84.0	51.0	67.0—Feb.	35.0—Jan.
1881–82	30.169	76.4	45.9	62.8—Feb.	29.0—Dec.
Mean average for 5 years	30.114	76.6	48.1	66.9	27.9

The mean Spring pressure, relative humidity, and temperature, the maximum and minimum Spring temperature, also the mean average for five years past, will be found as follows, viz.:

SPRING OF—	Mean Spring Barometer.	Mean Spring Relative Humidity.	Mean Spring Temperature.	Max. Spring Temperature.	Min. Spring Temperature.
1878	29.936	67.1	60.5	91.0—May	40.0—March
1879	30.046	68.4	59.3	91.0—May	38.0—March
1880	30.061	66.2	55.0	86.0—May	29.0—March
1881	30.006	68.4	60.4	88.8—May	37.0—March
1882	30.037	61.9	57.6	94.6—May	34.1—March
Mean average for 5 years	30.017	66.4	58.6	90.3	35.8

The tabulated statement following indicates the mean Summer pressure, relative humidity, and temperature, the maximum and minimum Summer temperature, and the mean average for five years:

SUMMER OF—	Mean Summer Barometer.	Mean Summer Relative Humidity.	Mean Summer Temperature.	Max. Summer Temperature.	Min. Summer Temperature.
1878	29.817	54.7	72.9	100.5—Aug.	49.0—June
1879	29.821	52.7	72.9	103.0—Aug.	51.0—July
1880	29.880	59.3	69.1	98.0—July	49.0—Aug.
1881	29.903	56.3	68.5	98.6—July	48.0—June
1882	29.898	57.0	71.1	99.8—Aug.	51.2—June
Mean average for 5 years	29.864	56.0	70.9	99.98	49.6

The following table shows the mean Autumn pressure, relative humidity and temperature, the maximum and minimum Fall temperature, and the mean averages for the past six years:

FALL OF—	Mean Fall Barometer.	Mean Fall Rel. Humidity.	Mean Fall Temperature.	Max. Fall Temperature.	Min. Fall Temperature.
1877	29.973	54.3	63.4	88.0—Sept.	37.0—Nov.
1878	29.991	54.4	62.5	92.0—Sept.	34.0—Nov.
1879	30.000	65.2	60.9	96.0—Sept.	33.0—Nov.
1880	30.035	54.9	59.9	92.0—Sept.	27.0—Nov.
1881	30.026	58.4	58.5	96.0—Sept.	32.0—Nov.
1882	30.024	69.6	58.8	99.6—Sept.	34.0—Nov.
Mean average for 6 years	30.008	59.46	60.07	95.60	32.83

The table following will be found to contain the mean direction of the wind, the total velocity, the rainfall, and the clear, fair, and cloudy days; also, days rain fell during the Winter months from 1877–8 to 1881–2:

WINTER OF—	M'n Winter Direction.	Velocity for Winter.	Rainfall for Winter.	Clear Days.	Fair Days.	Cloudy Days.	Days Rain Fell.
1877–78	S.E.	13.452	18.74	26	28	36	39
1878–79	N.	12.650	7.53	44	31	15	23
1879–80	S.E.	13.735	6.88	39	17	35	29
1880–81	S.E.	16.092	23.01	14	26	50	43
1881–82	N.	14.611	7.56	46	26	18	25
Mean av. 5 ys.	S.E.	14.108	12.75	33.8	25.6	30.8	31.8

The mean direction of the wind, total velocity, the rainfall, and number of clear, fair, and cloudy days, also number of days rain fell during the Spring season, from 1878 to 1882, will be found in the following tabulated statement:

SPRING OF—	MeanSpring Direction.	Velocity for Spring.	Rainfall for Spring.	Clear Days.	Fair Days.	Cloudy Days	Days Rain Fell.
1878	S.	13.962	4.33	45	28	19	21
1879	S.E.	14.530	8.84	39	34	19	31
1880	S.E.	19.653	16.66	49	24	19	25
1881	S.	14.966	3.01	60	22	10	12
1882	N.	17.774	6.12	57	19	16	19
Average for 5 years	S. and S.E.	16.177	7.79	50.0	25.4	16.6	21.6

The statistics following will be found to contain the mean direction of the wind, total velocity, the rainfall, the number of clear, fair, and cloudy days, also the number of days rain fell for the Summer season, from 1878 to 1882:

SUMMER OF—	Mean Summer Direction.	Velocity for Summer.	Rainfall for Summer.	Clear Days.	Fair Days.	Cloudy Days.	Days Rain Fell.
1878	S.	13.303	----------	83	9	----------	----------
1879	S.	13.645	.13	81	11	----------	3
1880	S.	16.066	Sprinkle	85	7	----------	2
1881	S.	16.531	.50	86	5	1	3
1882	S.	15.449	.10	87	4	1	3
Average for 5 years	S.	14.799	14.6	84.4	7.2	.4	2.2

The mean direction of the wind; the total velocity; the rainfall, and number of clear, fair, and cloudy days; also, the number of days rain fell for the Fall season from 1878 to 1882, will be found recorded in the following table:

FALL OF—	Mean Fall Direction.	Velocity for Fall.	Rainfall for Fall.	Clear Days.	Fair Days.	Cloudy Days.	Days Rain fell.
1878	N.	11.269	1.35	71	16	4	7
1879	S.	10.492	2.93	59	20	12	12
1880	N.	11.518	.05	71	14	6	2
1881	N.	12.993	2.73	73	15	3	11
1882	N.W.	12.213	6.42	61	22	8	15
Mean average for 5 years	N.	11.497	2.70	67.0	17.4	6.6	9.4

The tabulated statement below shows the number of times the wind was observed blowing from the different points of the compass for the Winter seasons from 1877–8 to 1881–2—three observations daily:

WINTER OF—	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
1877–78	66	7	15	69	54	19	3	11	26
1878–79	102	4	5	41	41	18	4	11	44
1879–80	41	13	19	77	30	17	6	47	23
1880–81	50	5	7	107	57	15	2	19	8
1881–82	86	9	8	75	35	18	7	12	20
Mean average for 5 years	69	8	11	74	43	17	4	20	24

The following table shows the number of times the wind was observed blowing from the different points of the compass; also the number of calms observed during the Spring season from 1878 to 1882, and is as follows from three daily observations:

SPRING OF—	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
1878	30	2	3	48	89	54	11	23	16
1879	34	3	1	29	82	75	13	16	23
1880	31	4	6	61	59	60	6	45	4
1881	50	4	4	42	71	71	10	14	10
1882	71	0	1	52	56	55	7	21	13
Mean average for 5 years	43	3	3	46	72	63	9	24	13

The wind's direction for the Summer months for 1878 to 1882 will be found to be as follows:

SUMMER OF—	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
1878	13	1	0	25	161	47	6	15	8
1879	24	1	0	5	111	79	8	37	11
1880	14	0	1	46	109	64	10	30	2
1881	21	1	0	58	115	55	6	16	4
1882	3	1	2	56	135	41	9	23	5
Mean average for 6 years	15	1	1	38	126	57	8	24	6

The table following shows the direction of wind during the Fall months from 1878 to 1882:

FALL OF—	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
1877	59	10	5	19	78	29	9	31	33
1878	75	5	3	12	64	36	15	37	26
1879	45	9	9	41	66	42	4	28	38
1880	75	7	7	40	55	37	12	30	10
1881	81	10	2	46	46	35	8	28	16
1882	19	8	5	60	54	27	20	66	14
Mean average for 6 years	59	8	5	36	60	34	11	37	23

The following data shows the number of times the wind was observed blowing from the different points of the compass, and also the number of calms occurring at the time of observations. The calculations are made from three daily observations, making 1,095 observations during each year, and 1,098 for last year, and is as follows:

YEAR OF—	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
1878	194	11	12	151	364	155	36	84	88
1879	165	18	14	140	306	220	29	104	100
1880	162	24	33	239	259	172	34	147	30
1881	217	24	12	232	280	176	30	72	51
1882	167	14	21	251	276	145	43	140	37
Mean average for 5 years	181	18	18	203	297	174	34	109	61

The following table shows the total number of clear, fair, and cloudy days; also, the number of days in which rain fell for each year from 1878 to 1882:

YEAR OF—	Clear Days.	Fair Days.	Cloudy Days.	Days on which Rain Fell.
1878	225	81	59	67
1879	223	96	46	69
1880	244	62	60	58
1881	233	68	64	69
1882	251	71	43	62
Mean average for 5 years	235	76	54	65

There being such a cold spell of weather during January, 1883, that I concluded to append a few statements in comparison of the mean daily temperature, or the number of days during the first two months (December and January) of the Winter season from 1877–8 to 1882–3, that gave a daily mean temperature below 40°, also the lowest mean, and the lowest or minimum temperature, and is as follows:

The number of days during the first two months of the Winter season of 1877–8 only gave four (4) days with a daily mean temperature below 40°, and they occurred in January, the lowest daily mean being 38.2°; lowest temperature, 27°.

The first two months of the Winter season of 1878–9 gave but two days, those two being in December, the lowest daily mean being 39.6°; the lowest temperature, 23°, on the twenty-ninth of December. The first two months of the Winter season of 1879–80 gave sixteen (16) days, nine (9) in December and seven (7) in January, the lowest daily mean being 33.0; lowest temperature, 25°.

The first two months of the Winter season of 1880–81 gave no days with a mean temperature below 40°; the lowest temperature during the time spoken of was only 35°, which was 3° above the freezing point.

The first two months of the Winter season of 1881–2 gave four (4) days with a daily mean below 40°, the lowest mean being 38.4°; the lowest temperature being 29°.

The first two months of the Winter season of 1882–3, that is, up to and including the 21st of January, 1883, gives fourteen (14) days with a daily mean temperature below 40°, the lowest mean being 31.7°, which is the lowest daily mean temperature that has ever been recorded in this city at the United States Signal Station in the last six seasons, that being the length of time the station has been in this city; the lowest temperature ever recorded, also, was in this season, being 22°, on the 2d. The 31st of December, 1882, gave about three and one half inches of snow, the first time snow has fallen to such a depth in this city for many years. Meteorologically speaking, the year 1883 has started in with an abnormal condition regarding the climatic changes for the Winter season of 1882–3.

WINE MAKING IN NAPA VALLEY.

TALCON VINEYARDS, NAPA, CALIFORNIA, January 2, 1883.

Edwin F. Smith, Esq., Secretary California State Board of Agriculture,
Sacramento, California:

DEAR SIR: Your favor requesting me to furnish a paper for your Annual Report on "Wine Making in Napa County," is received. As I am a resident of the county for but sixteen months, and have only passed two vintages here, it would be presumptuous in me to generalize, and tell how wine is generally made in this vicinity; but as my own operations have been so far successful, as the wine of both vintages has passed through fermentation quickly and safely, and brought the highest price in the market, perhaps it may be interesting to the public to hear

HOW I MAKE WINE.

Wine making with me means only the manufacture of *light dry wines*, either white or red. I do not fancy so called "sweet wines" or liqueur wines, such as angelica, port, and sherry; and while they can no doubt also be made in Napa and Sonoma Counties, and are made, I think that our climate and soil is especially adapted to furnish fine light wines, hocks, sauternes, and clarets. These I believe we will yet furnish of as fine a quality as any country, if the proper skill and care is applied to their manufacture; and we may as well leave the making of sweet wines to the southern portion of the State, where the climate is naturally adapted to them.

WHITE WINE.

I make light, delicate white wines. I let the grapes get thoroughly ripe, though not too ripe. The last will be the case in some seasons, if they are left on the vines until they begin to shrivel; they then contain a superabundance of sugar, and are deficient in acid, making a very heavy, juicy wine, but deficient in bouquet, and not so sprightly. When the must shows from twenty-three to twenty-five per cent on Walling's scale, the grapes are ripe enough. All moldy and damaged berries should of course be removed from the bunches, although we are but very seldom troubled with mold or rot in our uniformly dry climate; the last Fall, with its early and abundant rains, being much more of an exception than a rule. The grapes are stemmed by rubbing back and forth over a coarse wire screen, and then crushed between wooden rollers, set just far enough apart to break the skins, but not the seeds of the berries. From the mill they are put into fermenting tanks, where they remain generally for about two days and nights, if the average temperature is seventy. The fermenting room should be above the ground, and kept as near this temperature as possible, though even a temperature of eighty to ninety is no drawback, for I believe in rapid and thorough fermentation. If the temperature falls below seventy, it should be raised by means of a stove and pipes running through the room. I have not found it necessary the last two vintages, and the wines had lost all sweetness, and converted the sugar into alcohol at the end of a week in every case. Should the wines ferment slowly, I leave them somewhat longer than two days; if very rapidly, I press sooner; the object in view being to obtain the full flavor of the grape, but not to extract so much tannin by fermentation, as to make the wine too rough and astringent. The must is then drawn off, the pomace pressed, and all put together in casks, which are filled just full enough for the must to ferment without running over; the bung is simply reversed and laid on, or better still, a small sack of sand laid on the bunghole. As long as fermentation lasts there is no danger of injury to the wine, as the gas is escaping continually; but as soon as fermentation ceases, the bung should be closed. It is easy to determine this by laying the ear to the bunghole; when no hissing noise is heard, fermentation is over. The bung is first put in lightly, and after a week or so driven in tight, when the casks are also filled up to the bung, with wine of same quality. In two months from the time it is made the young wine is generally clear enough to rack. I do this by drawing through a faucet, inserted into a hole in the head of the cask about three inches from the bottom. Before inserting the faucet, the bung should be loosened, otherwise the confined air will stir up the lees at the bottom. Draw off into sweet, clean casks, and take all the wine that runs bright and clear; as soon as it becomes cloudy, it should not be mixed with the clear wine, but put into a separate cask to settle. The lees or sediments are distilled into brandy.

The casks should be scrupulously cleaned of all lees and sediment, especially the scum which adheres to the upper part of the cask during fermentation. Large casks are entered through the manhead, and can easily be cleaned with brush and broom. Smaller ones can be cleaned by repeated washings with water, poured in through the bunghole by a funnel, and then shaken up and down. It is best to insert a small chain, which, with the motion of the water, will rub off everything. Repeat this until the water runs out clear. The casks are filled to the bung, and refilled every week, as there is always some loss by evaporation and absorption of casks, and it is important that there should be no empty space above the wine where mold can form.

This method applies, however, only to the white wine grapes proper, to those which have little or no coloring matter, such as Riesling, Chasselas, Burger, etc. When white wine is to be made from Mission, Black Malvoisie, or other black grapes, the first run of the juice is taken off immediately after crushing, by pressing but lightly, and the skins and pulp of the grapes, with the juice they still contain, are put into fermenting tanks, to be made into red wine. The white juice is put into casks immediately and fermented in them; the red wine remains on the husks or pomace until all sweetness has disappeared, and violent fermentation is over, so that it has become cool, which is generally the case in about a week, if fermentation has been properly regulated. The pomace should be frequently stirred during fermentation, so that it will not become sour by contact with the air, or kept under the fluid by means of a perforated head, fixed below the top of the fermenting vat. The latter is the easiest, while I think the former rather the best method, as the pomace becomes more thoroughly mixed, and fermentation is hastened by the frequent mixing. But those who apply it should not be lazy or negligent, and stir the whole mass thoroughly at least twice a day.

MAKING RED WINES.

The true red wine grapes, such as Zinfandel, Burgundy, Lenoir, etc., should, I think, be made into red wine without drawing off the first run, as so many do with the Zinfandel, to obtain a deeper color and more astringency. The first juice is no doubt the richest in saccharine and the finest, and we deprive our clarets of a great deal of their best qualities by taking it off. This may be necessary in the Mission and Malvoisie, as they do not contain color enough, but they are not *red wine* grapes proper, and the less we plant of them the better. They will never make a first-class claret, as they lack the sprightliness and fine bouquet, nor a fine white wine either.

As the Zinfandel has become one of the leading grapes, and is very peculiar in its ingredients, containing a larger amount of acid than any other, I will confine myself mostly to it in these remarks. Most of our wine makers do not let it get ripe enough, but take it when fully colored, when in reality it is *not ripe*, but should hang a month longer. Making the wine so early, it is but natural that it should become light-colored and acid. It is only when fully and thoroughly ripe, with a good share of the berries shriveled (for it ripens unevenly), that it will make such a claret as we may well be proud of, and which will, at no distant day, take its place with the choicest clarets France ever produced.

If our grapes are thoroughly ripe (which is the case when they show from twenty-three to twenty-five on Malling's scale), they are stemmed and crushed as described before for white wine, and the whole mass put into the fermenting tank, stirred twice every day, mixing thoroughly, and when fermentation has reached the point at which all the sugar has changed into alcohol—(this can be ascertained by drawing some of the must from the bottom of the tank, and tasting it; if it tastes bitter, instead of sweet, it should be pressed). Draw off the liquid first, and then press the balance, which should, however, be added to the first run, as it contains more tannin and color. Five to six days of fermentation are generally sufficient; and I consider it a very injurious practice indeed to leave the wine for two or three weeks in the fermenting tanks, as so many do. When fermentation is over, no color or tannin will be extracted from the skins or seeds any way, and the young wine being in contact with the air, must lose sprightliness, and become weak and flat, if not moldy.

In racking and filling up, red wines are managed precisely like white wines, only, as fermentation is apt to progress more rapidly and thoroughly, they are generally the first that can be racked, as they become clear very rapidly.

Zinfandel thus made and managed (vintage, 1881,) was bottled when nine months old, pronounced by good judges equal if not superior to fine Chateau la Rose, and found ready customers at one dollar per gallon.

In locations where the Zinfandel has not sufficient color, this can easily be given by adding a small quantity of Lenoir to it in fermentation. This grape is very appropriately called "the black," as its color is so intense that a purely white wine can be changed to a fair claret color by adding one fourth of Lenoir. As it is very productive, healthy, and vigorous, and at the same time entirely resistant to phylloxera, every grape grower should plant it. It also gives fullness and body to the wine.

It should be our object to establish a reputation for California wines, and this we can only do by studying closely the peculiar products of each location. Some of our soils are eminently suited to the production of fine red wines, while others are more adapted to the delicate white wines. Hillsides which contain a good deal of iron and other minerals, will always produce finer wines than the deep, rich lands of the valleys, which may produce great quantities of grapes, but not the high quality that we must seek to obtain. That we can do so has been abundantly proven already. We want more brain-work, more skill and thinking labor, more discrimination on the part of the dealers, and a greater difference made in the price of really superior wines over the inferior than has been done so far. Fine wines should bring double and treble the price of common or inferior products; and it is only when we have reached that point when each will seek to produce the *best*, instead of the *largest quantity*, because he can obtain as much for one thousand gallons of fine wine as for three thousand gallons of inferior, that California wines will become as widely known and appreciated as they deserve to be. Let every one plant the varieties best adapted to his peculiar locality, make the wine in the best and most careful manner, and there will be a ready and remunerative market for all. I entertain no fears of an over-production of *good* wines. The great danger lies in indiscriminate planting, inferior handling of the product, and too great an abundance of poor and indifferent wines, not even fit to be distilled, as they will not make really fine brandy.

GEORGE HUSMANN.

PHYLLOXERA-PROOF VINES.

The most prominent classes of American vines, which are entirely resistant to the phylloxera insect, are the following:

Class One, Vitis Æstivalis, or Summer grape. This vine is a native of most of the Southern, Middle, and Western States. It has large, bright, heavy leaves, mostly lobed, clothed on the under side with loose cottony or woolly down, clusters long and rather loose, shouldered, berries rather small, black or brown in most cases. Its native habitat are the hillsides, where it clambers over small trees.

It is subdivided into the Northern and the Southern Æstivalis classes, the Norton's Virginia being the type of the Northern division, to which also the Cynthiana, Hermann, Neosho, Baldwin, and White Hermann belong. They have thick leathery foliage, berries small, bunches rather small, compact, not very juicy, but their must is very rich and heavy, with a great deal of color and very fine flavor in all the dark colored varieties, which make very rich and heavy deep red wines of considerable astringency and great body. The Norton's Virginia has a small bunch, small black berry, but bears very abundantly, and its juice is very dark, making a heavy purplish black wine, of great body and astringency. If well made, it will resemble the best Burgundies in character, and will be a valuable addition to the Zinfandel or any of the claret grapes, giving them fruitfulness and dark color. To the Cynthiana was awarded the prize as the "best red wine of all nations" at the Vienna Exposition, where the best connoisseurs of Europe were the judges. They will be invaluable for imparting color and fullness, blended with the Zinfandel and other red wines here. The Hermann, Neosho, and White Hermann, make a brownish-yellow wine, of a strong sherry flavor, and will produce a natural sherry; they could be blended with the Mission grape to great advantage. All of this Northern division, however, are difficult to root from cuttings, and can only be grown with reasonable success if planted in nursery and irrigated for one year, then transplanted into the vineyard. The southern division of the Æstivalis class has thinner foliage, heavier and more closely jointed wood. The leaves are not so downy beneath; bunch and berry larger and more juicy. The most prominent of these are the Herbemont or Warren, the Lenoir or Jacques, the Cunningham, Rulander, and Louisiana. They are all strong growers and abundant bearers, and grow more readily from cuttings than the Northern division, although they, also, should be planted in nursery for one year. They are the favorites of the French vintners, who value especially the Lenoir, Herbemont, and Cunningham. The Lenoir, or Jaquez, is a great bearer of handsome, perfect clusters, sometimes fifteen inches long, small, but very juicy black berries, which have a deep red juice, and makes a superior red wine of the Burgundy type. H. W. Crabb, of Oakville, Napa County, has several hundred vines of it bearing, from cuttings sent to him by me in 1877, and every one who has seen them becomes convinced of its bearing quality, its beautiful and durable foliage, and entire adaptability to this climate. He values it so highly that he has no cuttings to spare, but will use all the wood from several hundred vines himself, for cuttings and grafting.

The Herbemont, or Warren, is also a very abundant bearer of very handsome, compact clusters—berries black, small, but very juicy, sweet and delicious, called by Downing "bags of wine." The juice is not so dark as that of the Lenoir, and the grape contains about as much coloring matter as the Zinfandel, to which the cluster bears a strong resemblance. Its first run of juice makes a very fine and delicate white wine, if pressed lightly as soon as crushed, and the balance, if thrown into the vat and fermented for a week, makes a superior red wine. Its leaves are deeply lobed, heavy and persistent, and several very promising seedlings have originated from it in Texas, which are much larger in berry and bunch, but so far but little disseminated.

Cunningham and Rulander have more compact and smaller bunches than the two foregoing; contain but little coloring matter, and will make a very fine brownish-yellow wine of sherry character and very fine flavor. These may give us a natural sherry, as the must grades very high, and will be especially valuable for flavoring other varieties and giving them more character. The Rulander grows more readily from cuttings than any other of this class. All of the Æstivalis are entirely phylloxera-proof, very healthy and hardy, standing the severest droughts, with deep green foliage, and will flourish on all soils, but especially on dry sunny hillsides. Although making excellent grafting stocks for the Vinifera, I look upon their natural product as too valuable to advise using them as stocks; think they will give a higher standard of excellence to our clarets, port, and sherries than they have so far obtained, and their introduction as absolute necessity for that purpose.

CLASS II—VITIS RIPARIA.

"The Riparia class is entirely distinct from the Æstivalis. It is found wild along the large streams of the West, especially on the banks of the Missouri and Mississippi, where it clambers over rocks and small trees; is a vigorous but rather thin, long-jointed grower, with ashy-gray wood, and shining, mostly heart-shaped leaves, deep green above, lighter green below, without down on the under side. The fruit is small, black, with blue bloom, ripens in July, and has a deep red juice. All its varieties grow readily from cuttings, are exempt from phylloxera, and make good grafting stocks, although I doubt whether they will prove adapted to the dry hillsides of California. They should be planted in the valleys and on deep rich soil.

The Clinton and Taylor are the first cultivated varieties of this class, from which numerous seedlings have been grown. I will give short descriptions of the most prominent of them.

The Clinton has been cultivated longer than any of this class, and is a very long, rambling grower, with numerous thin branches. The bunch is compact, shouldered, berry oblong, medium black, juicy, but rather astringent and acid; colors early, but should hang late to develop its sugar. It has a peculiar flavor, makes a very dark-colored wine of fair quality, and is very productive, but is not well adapted to the California system of pruning as it grows too thin and sparse to form a good head. If grown for grafting stock, the lower eyes should be cut out on the cuttings, as it suckers badly from the roots if this is not observed.

The Bacchus is a seedling of Clinton, grown by James H. Ricketts, of Newburgh, N. Y., who calls it the best American wine grape, which I am inclined to doubt very much. It resembles its parent very closely in growth, bunch, and berry, but it is of decidedly better quality, and an immense bearer of uniformly perfect fruit. As the originator holds it at a very high price, it is but little disseminated and known, but may well be worthy of further trial. Mr. Ricketts has several other promising seedlings, of which the Ariadne, Pizarro, Naomi, and numbers two hundred and thirty-four, two hundred and thirty-one, and four hundred and thirteen, are the most promising. As most of them are hybrids between Clinton and Vinifera species, they may, however, not be fully phylloxera-proof, though very handsome and of good quality.

The Marion has been imported to France as a resistant stock, and on account of its very dark juice, to give color to their clarets. It has, however, a very objectionable flavor, and I consider it only valuable as grafting stock. It has peculiar, light yellowish-green foliage, is a strong grower and very productive.

The Taylor was first disseminated by Judge Taylor of Kentucky. The bunch and berry are small, golden yellow, turning pale red when very ripe, and makes a very fine white wine, resembling hock, but is very delicate in its bloom, easily affected by late frosts or rains, and therefore hardly productive enough to be grown for its fruit. It makes good grafting stock, and has furnished a number of seedlings much more valuable than the parent for wine.

The best known of these is the Elvira, which originated with Jacob Rommel, of Morrison, Mo., and has become the leading white wine grape of that State, on account of its great productiveness (often bearing six bunches on a branch), the fair size of the bunch and berry and the good quality of its wine. It produces well in this State also, and H. W. Crabb, who has fruited it, and made wine from it, is so much pleased with it that he intends to propagate it largely. The bunch is below medium, compact, berry rather small, light yellow, turning pale red when very ripe, juicy, and sweet. It is a short-jointed, stocky grower, and will adapt itself to the spur system, but seems to drop its foliage somewhat. It makes excellent grafting stock, and it grows from cuttings with the greatest ease, but I think the fruit will also prove valuable for wine.

Amber and Pearl are also seedlings of Taylor, grown by Mr. Rommel, and may prove valuable for their fruit, while they will undoubtedly be good grafting stock. They are of higher quality than the Elvira, as is also the Transparent, another of his Taylor seedlings.

But the most promising of all is the Etta, a seedling of the Elvira, with the strong, healthy growth of its parent, and its great productiveness, but larger in bunch and berry, much finer in quality, and more juicy. It has fruited for three years, has already increased greatly in size of bunch and berry, and cannot fail to make a splendid white wine. It is yet very scarce.

The Vehland is a Taylor seedling, originated by J. Weydemeyer, Hermann, Mo. Bunch and berry are medium size. It is a strong, vigorous grower, withstands drought well, and makes very fine hock wine. It grows very readily from cuttings.

The Missouri Riesling originated with Nicolaus Grein, Hermann, Mo., from seed of the Taylor, is very productive, compact bunches, and medium sized juicy berries. It is a fine, stocky grower, and makes a very fine white wine. It is extensively planted in Missouri for white wine now, and is very popular there.

Grein's Golden is a beautiful grape, of a peculiar bronzy golden color, bunch rather loose, berry large, juicy, and sweet, makes a fine wine, and promises to be a fine table and market fruit.

The Noah is a Taylor seedling, grown by Mr. Wasserzieher, of Nauvoo, Ill. It is attracting much attention as a wine grape, is very productive, hardy, and healthy, of good quality, and a strong and vigorous grower.

These are the most prominent Riparia varieties, all of which will, no doubt, make good stocks for rich soils, and the majority may also prove valuable for wine.

The wild vine also makes good resistant grafting stocks, and grows very easily from cuttings.

CLASS III—VITIS RUPESTRIS.

This grape, of which no cultivated varieties are known, is a native of southwest Missouri, parts of northern Texas, and Arkansas, where it grows on the driest and most rocky hillsides, generally on southern slopes and on flinty soil. It is therefore well adapted to shallow, poor soils, and would flourish well on our driest hillsides, and the driest parts of the State. It makes a very good dark claret of fine flavor and body, but I doubt whether it will be productive enough to pay cultivating it for its fruit. It is a very close-jointed, sturdy grower, growing more in the shape of a bush than a vine, with numerous short branches, heart-shaped small leaves, bright green and shining above, lighter green below. It grows from cuttings with the greatest ease, all varieties take well on it in grafting, and is just the stock we want for dry hillsides, being entirely phylloxera-proof. It has been fully tested in France, and is now largely imported there for grafting stock for the driest sections.

It is highly probable that the native vine of this State (Vitis Californica) will make a good resistant stock, as it is a vigorous grower, and the seedlings, at least, make a fine, stocky plant. All I have seen of this and the Vitis Arizonica, or wild vine of Arizona, in Wetmore's nursery, look very promising. But, still, we have no positive proof of their resistant powers, and there is one serious objection to seedlings as a grafting stock, which in my opinion fully counterbalances all that can be said for them as making more vigorous and healthy plants than those grown from cuttings, namely: the propensity of the seedling to sucker. To make this more clear, I must explain the *modus operandi* a little closer by which seedlings are made available for large plantations. They are sown in rows very close, and if they come up well and grow strongly, they are taken up and removed to the vineyard when one year old. As the roots diverge from the crown of the plant, just below the surface, and branch off in all directions, the plant must be trimmed to a stock of at least six inches above the crown, to enable the vineyardist to get his plant down to the absolutely necessary depth for vineyard planting, and the crown put six inches below the surface in planting. Around the crown are a great number of dormant buds, which are all ready to start, as well as are all the buds on the balance of the stem. I fear there will be great annoyance from the shoots of the stocks, which are apt to start from every bud. For this reason I would give the preference, were I planting a vineyard, to good plants grown from cuttings, which are not so apt to throw up suckers.

The theory of plants from cuttings being enfeebled by long propagation, looks more formidable on paper than it really is in practice. If the cutting is taken from a healthy, vigorous plant, put into good soil, and cultivated well, it will grow well and make a vigorous plant, as every one can see by daily practice in vineyards. Of course, all feeble and unhealthy growth should be avoided in making the cuttings, but I object as much to a very large cutting, with a great deal of pith, than to one of the extreme end of the shoot. The best cuttings are those from medium sized, close-jointed, and firm wood. These will root most readily, and the wound at base of cutting heal over more completely, than on very large cuttings. Could I have my choice I would rather plant a good plant from a cutting, for reasons above given, than seedling plants, though the latter are grown more easily.

To sum up, allow me a short recapitulation of the principal classes of vines which have proven resistant, and their adaptation to different soils:

The Æstivalis class is adapted to all soils, as they flourish equally well on dry hillsides and in valleys. Their fruit makes first-class wine—claret, burgundy, or sherry—and as they start late in Spring they are also comparatively safe from late frost. They root more difficult from cuttings, and should be propagated in nursery, with irrigation to insure success.

The Riparia class are well adapted to the lower lands and deep soil, are all vigorous growers, and many of them will undoubtedly also make a good wine, while they make a good grafting stock and root readily from cuttings.

The Rupestris is well adapted to the driest soils, makes good grafting stock, is a very stocky, short-jointed grower, and grows very easily from cuttings.

The Californica and Arizonica, as well as the resistant Eastern varieties, should be tried generally and their resistant qualities tested by every grape-grower—at least on a small scale.

If we apply ourselves at once to this task, we can counteract the evil in time, as the insect makes comparatively slow progress here; and allow me to say here that, although I can fully appreciate the exertions made to save the vineyards of Vinifera varieties already existing, and hope that the progress of the insect may be considerably retarded by good cultivation and special manures, I consider most of them eventually doomed, except, perhaps, in localities where the insect can be kept out by irrigation, and consider it an act of imprudence, if not folly, for any one to plant vineyards of Vinifera cuttings, or plant in locations where it already exists. Let us profit by the dearly bought experience of the French, who, after years of fruitless efforts to find a remedy other than American vines, now consider all insecticides only in the light of a procrastination of destruction, and see their only safety in planting phylloxera-proof vines. The additional cost is but a trifle, compared with the application of insecticides; it insures safety, which the latter does not, and we can retain all the fine varieties, of which California is so justly proud, by grafting on resistant stocks, while we will add to the reputation of her wines by the cultivation and manufacture into wine of the Æstivalis varieties. It is the only shade where all else looks bright for the grape-grower in the future. Let us then guard against it in time.

GEORGE HUSMANN.

Since writing the above, I have tasted some samples of wines made by Mr. W. H. Crabb, from the Elvira and Lenoir, made in his vineyard at Oakville, which have fully convinced me of the great value of their product here. The wine of the Elvira, of a bright, golden color, and clear and fine three months after making, is not alone very fine by itself, but will be of inestimable value for blending with white wines of little character, such as Burger, White Mission, etc. The Lenoir we consider the choicest red wine yet seen here. It has as intense color as the Charbonneaux, but is superior in flavor and body. Both will be very valuable acquisitions, and as they are also great producers, and phylloxera-proof, should be planted by every one who wishes to establish a *permanent* vineyard. We do not doubt that the Herbemont will prove fully as valuable, as it is ranked even above the Lenoir in France in quality, though not in color.

AMERICAN VINES.

The following extract contains about the latest French experience on the subject of American vines, and is conclusive enough to convince the most skeptical. It clearly establishes two points: 1st, The entire resistance of the American vines. 2d, The adaptability for grafting the Vinifera on the American, as it positively states that the product has been increased by half as much again on the original yield:

Under the heading, "Measures for Combatting the Phylloxera," a pamphlet has recently been published at Bordeaux, giving an account of a visit paid by M. A. Lalande, the deputy for Gironde, in company with M.M. Ed. Lawton and T. and P. Skawinski, to the districts of the Herault and the Gard, for the purpose of studying the means employed in those departments with a view to the destruction of the phylloxera, or, where necessary, reconstituting the vineyards already destroyed. This journey, which extended over six days, was undertaken more especially in the interests of the vine-growers of the great and important district of the Medoc, the center of the richest vine districts of France.

Up to the present time the ravages of the phylloxera, although considerable, have not by any means been so serious in the Medoc as in some of the other wine-producing districts of France. In the department of the Gard, for instance, it is stated that out of two hundred and fifty-five thousand acres of vines, two hundred and fifty thousand have been destroyed; while in the Herault, which produced at one time three hundred and thirty million gallons of wine, and the average annual production of which was two hundred and twenty million gallons, the quantity for 1881 fell to seventy-seven million gallons only. From these figures it will be readily seen that the field for inquiry offered by these two departments was an extensive one, and the information to be obtained should be of extreme value as a guide to other districts, and all the more so, as energetic measures have been already adopted by the vine-growers of the south, with a view, if not to save, at least to renew the vines which constitute for them the chief wealth of their districts.

Before proceeding further, we may say that the information and evidence obtained by M. Lalande and his fellow-travelers throws a somewhat new light upon the question of the phylloxera, and seems to show that serious as the damage caused by this insect has been, and still continues to be, the case is not altogether a hopeless one. Of various remedies, some thousands in number, suggested for combatting the phylloxera, three only at the present time hold an important position. The credit of having suggested one of these, that of replanting by the American vines, is assigned to M. Laliman, and that gentleman shares with Baron Thenard, M. Dumas, and M. Fancon, the honor of having indicated to the French vine-growers the three means capable, according to situation and other circumstances, of resisting the terrible plague which at one time threatened to annihilate the vineyards of France—that is to say, the employment of insecticides, submersion, and American vines.

Of the first remedy we hear but few particulars during the journey undertaken by M. Lalande; of the second no notice is taken at all; while on the other hand of the results obtained by means of the third, most striking evidence is given, and, indeed, it is apparent that it is to the last remedy—that of replanting with American vines—that M. Lalande and his fellow-travelers attach the greatest importance.

On the first day of their excursion the chief interest seems to have been attracted to some vineyards in the neighborhood of Beziers, where an extent of more than five thousand acres of vines had been preserved for some years past by means of sulphur of carbon, accompanied each year by manuring over about a third of the extent of the lands in question. As a result of this treatment, it is stated that the vegetation was good and normal, although there were some points where the sulphur of carbon appeared not to have acted with the same efficiency and success as elsewhere. The failure in these cases, however, was attributed to the extreme humidity which had paralyzed the action of the sulphur, a failure which, it is hoped, may be remedied in future by means of drainage.

Proceeding on the second day to the neighborhood of Montpellier, a visit was then paid to an estate on which all the French vines had been destroyed some time previously, and which now presented the interesting appearance of an entire reconstitution of the vineyard on a grand scale by means of American vines planted ten years previously, and subsequently grafted with the French vines, which latter have since offered a perfect resistance to the attacks of the phylloxera.

In the same district another property was found where the vines, which were of a French species, had been grafted either on the Lenoir, Clinton, Taylor, or Riparia, and were in a splendid state of vegetation, with an abundant appearance of fruit.

Similar accounts are given as to a number of other properties visited on this and the succeeding days, as to which M. Lalande remarks: "It does not appear necessary to give a detailed account of all we have been able to observe. We limit ourselves, therefore, to remark-ing that, after having seen numerous specimens of all varieties of American vines introduced into France, we have especially noticed some Lenoir and Herbemont vines as presenting a magnificent appearance, with a fair quantity of fruit, although, it should be stated, much less so than was to be found where French vines had been grafted on American stocks." As a proof of this fact, some particulars are given of a property in the neighborhood of Montpellier where all the French vines had been destroyed by the phylloxera. Here some two hundred acres had been replanted a few years previously with the American vines called Riparia, and these had been subsequently grafted with French vines. The results in this case were splendid, the vegetation being very fine, and the quantity of fruit enormous; in fact, all the vines were loaded with magnificent grapes, and these extremely well formed, so much so that the production had increased by half as much again per acre on the original yield.

Very much the same results were observed on the last day of the journey, when visiting the extensive vineyards of the Duchess Fitz-James. This lady has given much attention to the question of the advantages to be derived from replanting with American vines, and an article contributed by her some twelve months ago to the Reveu des deux Mondes on the subject of American vines may be said to have contained, at that time, all the information to be obtained in regard to the same. Speaking of this property, M. Lalande says: "We have much admired here the American vines—principally the Lenoir—cultivated with a view to direct production, as also the American vines grafted with French varieties. We have, however, still more admired, if this was possible, the energy and intelligence displayed by the Duchess Fitz-James in the reconstitution of her vineyards. Some idea may be formed of this when we state that she has already successfully replanted twelve hundred and seventy-five acres of vines, and is making arrangements for increasing this replanting to the extent of nearly two thousand acres, thereby inspiring the conviction that the magnificent vineyards of this district—now almost entirely destroyed—will be able gradually to be reconstituted by means of American vines.

One other curious piece of information resulted from this visit. It appears that, it having been found that vines planted in sandy soils resisted better the attacks of phylloxera, these lands, which formerly had been neglected, and were worth scarcely thirty-two shillings per acre, have now, after having been planted with vines, increased in value to nearly one hundred times that amount. Thus in the sandy soil of the Aigues-Mortes the American vines which have been there planted presented a magnificent appearance, with an abundant show of fruit.

From all the information obtained during their visit, M. Lalande and his fellow-travelers state, as the result of their experience, that they found in the departments of the Herault and the Gard the preference was given by the vine-growers almost exclusively to two kinds of American vines—the Lenoir and the Riparia—although some other varieties, such as the Clinton, the Solonis, the York-Madeira, and the Rupestris are considered excellent importations for grafting with French vines.

Too much praise cannot be bestowed upon M. Lalande and those associated with him in this journey, undertaken as it was entirely in the interests of the French vine-growers, and if, as appears more than likely, as the result of their visit, the practice should become general throughout France of replanting with American vines as a means of resisting the phylloxera, the destruction of the French vineyards, which at one time appeared more than possible, may, it now seems more probable, be averted.

THE GRANGE: ITS ORIGIN, PROGRESS, AND PURPOSES.

BY HON. D. WYATT AIKEN, OF SOUTH CAROLINA. READ BEFORE A CONVENTION CALLED BY THE COMMISSIONER OF AGRICULTURE, JANUARY 23, 1883, TO CONSIDER THE SUBJECT OF AGRICULTURAL EDUCATION.

Mr. President: The term "Agricultural Education," selected by you as one of the topics for discussion during this convention, is to my mind indefinable. He who has acquired much knowledge by reading is universally conceded to be an educated man, and such an one may have gathered from books a vast deal of agricultural knowledge, but if he knows little or nothing of the practical application of the many sciences comprehended under the word agriculture, this convention, at least, would not accord to him an "agricultural education."

On the other hand, hosts of farmers without education, agricultural or otherwise, have attained success in life by applying sound common sense and good judgment to the execution of their plans. Hence, I say the term "agricultural education" is indefinable.

Possibly some of the agricultural colleges of the States of the Union are to-day imparting this species of education to their students, where they have a curriculum for the open field, as well as a curriculum for the school-room; for surely he is acquiring an "agricultural education" who learns the science in the laboratory and immediately applies it upon the farm. But if such a thing is done at the present time it must be of recent origin, for anterior to 1877 it was a misnomer to call any institution in the United States an agricultural college. Grant, however, that such an education is imparted by our agricultural colleges, it is only to the sons of farmers, and not to farmers themselves, for to most of these latter there were no such times as college days. But it is of the farmers' school I desire to speak—of the Grange—the school-room of the Patrons of Husbandry, where the farmers with their wives and children meet together upon a common footing, "with every barrier to social intercourse thrown aside," and there endeavor to balance exhaustive labor by instructive social amusements, or attempt to communicate knowledge upon every conceivable subject that pertains to the farm. Upon the origin, progress, and purposes of this organization I now propose to submit a few thoughts.

The Order of the Patrons of Husbandry is still in its minority, if measured by the standard of a human life-time, and yet its birth and infancy are shrouded behind a palpable vailing of doubt as impenetrable as if it had emerged from the darkness and gloom of the middle ages. Its founders are well known, and are all living; but just how much of the structure each one framed or erected, they themselves are unable to inform us. Suffice it to say that in January, 1866, Mr. O. H. Kelly, a clerk in this Department, was sent upon a mission of some sort through the South by Mr. Newton, the then Commissioner of Agriculture. Kelly journeyed as far south as Charleston, S. C., thence to Savannah, Mobile, New Orleans, up the Mississippi to Memphis, across the country to Atlanta, and back again to Washington City by the twenty-first day of April following (1867).

Impressed with the disorganization of that peculiarly agricultural section, and grieved at the utter demoralization of its people, whom he found intelligent and trustworthy beyond his anticipations, Kelly conceived the idea, that for the resuscitation of the country and the recuperation of its farmers, whose wealth and resources had been swept away by the cruel hand of war, organization was a necessity. This, however, was but a transient thought as applied to the farmers of the South, for a moment's reflection convinced him that there was vital need of organization among the farmers of the Union, North as well as South, and to effect such an end became the thought of his life. He reasoned that agricultural clubs were neither permanent nor effective; they were ephemeral, and seldom if ever controlled by farmers. State and county fairs were not for farmers alone, but open to the competition of the world. In his soliloquy he queried, why should not farmers join in a league peculiar to themselves, in which others should not be admitted to membership? Such an union would be partisan, and if partisan it should be secret, and if secret it must have a ritual to make it effective and attractive. This process of reasoning rapidly brought him to a conclusion, and forthwith he undertook to execute the ritualistic framework of such an organization. The task was, however, beyond his capacity, and he soon found himself sounding in deep water. But Kelly was a man not easily baffled, so with ardor unabated he resorted to the expedient of advising with counselors.

Mr. J. R. Thompson, then as now an officer in the Treasury Department, and Mr. William M. Ireland, then Chief Clerk in the finance division of the Post Office Department, to which bureau Kelly had been transferred in the Fall of 1866, were two congenial companions whose acquaintance he had made after his return from the South. They were both schooled in the mysteries of Masonry, and the former was a proficient in the composition of ritualistic work. Kelly had no hesitancy in approaching these two friends. They heard his story, and indorsed his efforts, and the trio had repeated consultations upon the subject. Before making visible progress, however, the necessity arose for the counsel of a practical agriculturist.

By common consent, Mr. William Saunders, then as now the skilled and efficient superintendent of the garden and grounds of this Department, was invited to join them, which he did with some misgivings, however, because of the comprehensiveness of the work as he appreciated it.

This quartette, unwilling to pass judgment upon the work of their own minds, invited the Rev. John Trimble, then an officer in the Treasury Department, to exercise the privilege of criticising their labors as they progressed.

After a season, the Rev. A. B. Grosh, then a clerk in the Agricultural Department, and an Odd Fellow of high repute, and Mr. F. M. McDowell, then as now a vineyardist of Wayne, N. Y., and a friend of

Mr. Saunders, were induced to labor with the five, and these seven constituted the immortal founders of the Order of the Patrons of Husbandry, though several mutual friends now unknown to the Order were at sundry times consulted, and suggested much that was valued, but a vast deal more that was rejected.

For nearly two years these seven men wrought with an energy unaccountable, and with a faith amounting almost to inspiration, until they completed a well devised scheme of organization, based upon a ritual of four degrees for men, and four for women, unsurpassed, in my judgment, in the English language for originality of thought, beauty of diction, and purity of sentiment. Having framed a constitution, adapted to this ritual, to govern them, these men met on the fourth day of December, 1867, in the little brown building now standing embowered in the trees on the corner of Four-and-a-half Street and Missouri Avenue in this city, which was at that time the office of Mr. Saunders, and then and there constituted themselves the *National* Grange of the Patrons of Husbandry, with Saunders as Master, Thompson as Lecturer, Ireland as Treasurer, and Kelly as Secretary; the remaining offices left vacant.

What a conception, that seven comparatively humble and unambitious men should presume to style themselves a *National* organization! Was this presumption, was it fanaticism, or was it inspiration?

During the four years next succeeding, their zeal was nothing abated. Their time, their labor, and their scanty cash were all cheerfully given to scatter the seeds of promise far and wide over the Union, for they fervently believed they were casting their bread upon the waters. As an evidence of their faith and enthusiasm, Kelly resigned his clerkship and embarked upon a pilgrimage among unknown farmers in the Northwest, taking with him neither scrip nor money, for he had neither, and his comrades had none to advance him. The only letter of credit furnished him was a sort of "to all whom it may concern" epistle, which perchance might be of service to him if he met an acquaintance or friend of either of the seven. They buoyed him, however, upon the eve of his departure with a fraternal "God bless you and your efforts, Kelly."

Was there ever a better display of self-reliance and fortitude? Kelly had pluck and his comrades confidence, so he went on his way rejoicing. Kelly was scarcely a success, however, as an evangelist, for he organized but one Grange at Harrisburg, Pa.; one at Fredonia, N. Y.; one at Columbus, Ohio, and perhaps one or two others on his way to Northern Minnesota, chiefly in cities where farmers are not wont to congregate to do farm work, and arrived at his former home without a penny in his pocket, his traveling expenses having consumed the charter fee of fifteen dollars, which he received from each Grange organized. Meanwhile, his co-laborers in Washington were printing and distributing circulars declarative of their object, were issuing copies of their constitution, were printing manuals containing the ritual, and frequently were so destitute of funds that they were unable to pay the postage upon the printed matter they wished to distribute.

In those days the franking privilege was a boon granted for the asking, but never in any instance was this favor requested for a single parcel, nor were alms ever at any time solicited to further their laudable efforts.

During these four years this septuary brotherhood met frequently, and formally once in each year as the National Grange. There is no recorded evidence that a quorum was always present, even at their annual meetings; indeed, quite the contrary is easily proven, for at the third annual session of the National Grange, Worthy Master Saunders with marked dignity delivered his inaugural in the presence of Secretary Kelly, his entire auditory, and when he concluded, asked leave to print in the next morning's daily papers, that the two might buy a few extra copies each, and thus be enabled to circulate their proceedings. Of course leave was granted. The printing was done, and two hundred copies of the morning paper were purchased and distributed at private expense. But the National Grange preserved its dignity, and the founders reasserted their faith in its perpetuity; a confidence amounting almost to prescience.

The constitution of the Order required that every subordinate Grange should be composed of at least nine men and four women, and that fifteen such Granges might apply for the organization of a State Grange. In accordance with these provisions a State Grange was organized in Minnesota on the twenty-third day of February, 1869, and another in Iowa on the twelfth day of January, 1871. On the third day of January, 1872, the National Grange met in its fifth annual session, and as an accession to its members hailed with a welcome the presence of Dudley W. Adams, the Master of the State Grange of Iowa, and the first member of the Order who had ever met with the original seven.

Prior to Kelly's missionary excursion to the Northwest, two subordinate Granges had been organized in Washington City, of good material doubtless, but scarcely such as were required by the constitution, which authorized the initiation of only such as "were engaged in agricultural pursuits." However, these two may without impropriety be said to have been rehearsal Granges, in which the symmetrical fitting together of the degree work could be experimentally and satisfactorily tested.

Anterior to the fifth session of the National Grange there had been organized in the several States about two hundred Granges, whose charter fees had partially reimbursed the founders the money advanced in the cause, but annual salaries had been promised the Master, the Secretary, and the Treasurer, not a dollar of which could now be paid, for there was as yet not a surplus penny in the treasury. During the year 1872 new life was infused into the Order, and before its close more than one thousand Granges were organized, scattered over more than half the States of the Union.

The founders continued to work most assiduously and framed a degree peculiarly suited to the State Grange, and another higher one for the National Grange, and still another for those patrons who had served twelve months or longer in the National Grange. They also appointed deputies to work in the Grange field. Your humble orator was appointed "General Deputy for the Southern States."

In the Fall of 1872 the Secretary mailed to all the Masters of State Granges, to the deputies, and to others who had labored for the cause, a letter of invitation to convene in Georgetown, D. C., on the eighth day of January, 1873, in the sixth annual session of the National Grange. Seventeen delegates, representing eleven States, assembled on that day at the place designated, six of whom were Masters of State Granges, and the remainder deputies in the Order. In addition to these, four ladies honored the body with their presence, and now, for the first time in its history, the National Grange began to assume the proportions of a national organization. The long-cherished hopes of the founders were about to be realized. The American farmers were at last aroused from their lethargy, and expressed a willingness to combine together for their mutual benefit and protection. And to accelerate so glorious a consummation, these noble founders, with a magnanimity equaled only by their sincerity, relinquished their claim to this admirably devised system of organization, and delivered it over with all its franchises—its organic law, its ritual, and the accumulated results of six years of laborious work—as a gratuity to the National Grange as constituted at this its sixth annual session.

Scarcely had acknowledgments been returned for the donation before the keen blade of revision was thrust into its organic law, and many of its patriarchal features rejected, and provisions inserted more in accordance with the spirit of our republican institutions. Every one present was allowed to vote, and the State of Iowa was accorded five votes, a preponderance she held in the National Grange for several years afterwards.

The sixth session continued for four days, and before adjournment the foundation was laid for active, energetic, progressive work during the succeeding year. The enthusiasm of the founders was imbibed by every delegate present, and each avowed himself a propagandist on his return home. To date there had been organized more than thirteen hundred Granges, more than half of which were in the two States of Iowa and South Carolina. No valid reason was entertained why a majority of the States should not each possess as many as then existed in these two combined. A little more than twenty-one thousand dollars—twenty-one thousand and ninety dollars—had been received by the Treasurer and expended in distributing circulars, printing manuals and constitutions, and in paying off old debts to the satisfaction of the Grange. But there still remained a debt of six thousand dollars due as salaries, which it was then resolved should be liquidated, though the treasury had been exhausted. Everything worked in perfect harmony, and the labors of the session were closed by the institution of a brotherhood as fraternal as the ties of Masonry, and as binding as the fellowship of the Christian Church. Great prosperity hovered in sight. Hope became confidence, and perseverance a labor of love. "Organize," "organize," "organize," was now the shibboleth of the American farmer. Wherefore? cried the perplexed observer. His inquiry was answered by any and all farmers, who assigned as many reasons for the necessity of organization as there were grievances fancied or real, and of both there were legions. Yet, with all, there was no well-defined general or individual purpose in view among the mass of farmers, save that of organization. It was a partisan affair, and it was secret, and therefore if correctly managed could not fail to benefit the membership. So said the interested parties, without properly appreciating much that was designed by the founders. The delegates to the sixth session of the National Grange themselves entertained but crude ideas of the prospects of the growth and development of the Order, as was evinced by the speech of Brother T. R. Allen, of Missouri, in which, just before adjournment, he besought the Grange with tears in his eyes to meet twelve months hence in St. Louis, pledging them his utmost efforts to greet them with one hundred Granges. His appeal was heeded. St. Louis was chosen as the place of meeting in 1874, and when the National

Grange assembled there they received the joyous news that there were over fourteen hundred live, active, subordinate Granges in the State of Missouri alone.

The years 1873 and 1874 were marvelously prosperous years for the Grange. In the former, eight thousand six hundred and sixty-eight subordinate Granges were organized; and in the latter, eleven thousand nine hundred and forty-one.

Then it was that in our strength we exposed our weakness; our debts had been paid, and our coffers were full. But we had grown suddenly too rich and powerful. We had leaped from poverty into affluence. From a struggling brotherhood of seven we had developed with magic growth into a fraternity of over twenty thousand subordinate Granges, averaging a membership of forty, all adults, or well-grown male and female youths, and our numbers were increasing at the rate of thousands a month. But our ranks lacked discipline. Our leaders were afraid of the multitude, and chaos prevailed to a considerable extent throughout the Order.

At the St. Louis session in February, 1874, the National Grange issued its first "Declaration of Purposes," a portion of which read as follows:

"We shall endeavor to advance our cause by laboring to accomplish the following objects:

"To develop a better and higher manhood and womanhood among ourselves. To enhance the comforts and attractions of our homes, and strengthen our attachments to our pursuits. To foster mutual understanding and coöperation. To maintain inviolate our laws, and to emulate each other in labor, to hasten the good time coming. To reduce our expenses, both individual and corporate. To buy less and produce more, in order to make our farms self-sustaining. To diversify our crops, and crop no more than we can cultivate. To condense the weight of our exports, selling less in the bushel and more on hoof and in fleece; less in lint, and more in warp and woof. To systematize our work, and calculate intelligently on probabilities. To discountenance the credit system, the mortgage system, the fashion system, and every other system tending to prodigality and bankruptcy.

"We propose meeting together, talking together, working together, buying together, selling together, and, in general, acting together for our mutual protection and advancement as occasion may require. We shall avoid litigation as much as possible by arbitration in the Grange. We shall constantly strive to secure entire harmony, good will, vital brotherhood among ourselves, and to make our Order perpetual. We shall earnestly endeavor to suppress personal, local, sectional, and national prejudices—all unhealthy rivalry, all selfish ambition. Faithful adherence to these principles will insure our mental, moral, social, and material advancement."

At the same time they declared it to be their purpose to bring consumer and producer together; to wage no warfare upon any other interest; to advance the cause of education among the brotherhood and for their children by all the means in their power; to destroy sectionalism, and last, but not least, to inculcate a proper appreciation of the abilities and sphere of woman.

At this session thirty-two States were represented; twelve of them by the Masters and their wives, and twenty of them by the Masters alone; also, one Territory by the Master.

Early in this season of prosperity we were called upon to prove in a most practical manner many of the purposes to which we had given a declaration. The grasshopper plague of the Northwest appeared to be a mysterious Providence sent to test our sincerity. And scarce had we time to verify our faith by our works, before the father of waters deluged the Southwest, and subjected us to a further test. Appeals for subsistence came, but not in vain, from our brethren in both those sections; over twenty thousand dollars were taken from our treasury and invested in breadstuffs, provisions, and planting-seed, which were shipped, freight prepaid (and in many instances no freight was charged either by boat or railroad), for distribution among Patrons in Iowa, Nebraska, Minnesota, Dakota, Kansas, Colorado, Missouri, Arkansas, Mississippi, Louisiana, and Alabama.

All the while our members were constantly and daily increasing, our treasury was plethoric, and regularly growing fuller. But to properly appreciate the rapidity and extent, yea, the very enormity of our growth at this time, a few incidental facts may perhaps be properly related here.

For several years consecutively, as soon as practicable after the adjournment of the National Grange, thirty thousand copies of its proceedings, averaging one hundred and fifty pages each, were printed and delivered free of cost to the subordinate Granges.

Miss C. A. Hall, of Minnesota, who doubtless deserves the credit of suggesting the idea of female membership in the Grange, compiled and secured the copyright of a song-book for the Order, which the National Grange bought for one thousand dollars, and printed in many consecutive editions of ten thousand copies each.

The Executive Committee, impelled by the necessity of relieving the unlettered farmer, who might be chosen to fill the Master's chair of his Grange, from the embarrassment of his own ignorance, attempted to purchase the copyright of Cushing's Manual, that a copy might be placed in the hands of every subordinate Master. But failing to negotiate the purchase, they compiled a "Patron's Parliamentary Guide," and circulated fifty thousand copies among the subordinate Granges.

Postmasters from all the States informed us that the Order had greatly increased the bulk of their mails, and one said that "there are now thirty newspapers taken at this office, whilst there was but one taken before the establishment of the Grange in this vicinity." And one clergyman wrote, that "since the introduction of the Grange I have seen a remarkable change in the walk and conversation of my flock; they are more careful in their dress and general appearance and are reading more."

From every quarter came the Grange call for books, and much money was invested in select libraries for Granges in many of the States.

To every Grange organized the National Grange sent a paraphernalia—a sort of equipment chest, containing materials necessary to an intelligible comprehension of the ritualistic work of the degrees; among other articles was a knife, an implement with which every *laborer* should be provided, to remind him "never to break a twig or a flower, but always to cut it smoothly with a knife, so as not to injure the plant." Thus he was instructed emblematically "in his intercourse with his fellow-beings to correct an error tenderly and with the smooth edge of affection, and never to bruise a wound he wished to heal." The Executive Committee, to procure the needed supply of these knives, visited the largest cutlery manufacturer in the United States, who, when told that we wanted ten thousand of these knives, with an expression of astonishment exclaimed, "Gentlemen, do you deal in anything but knives?"

Is it presumption to suggest that the world has never seen a better educator than the Grange? It takes care of its own, and makes them better men and better women, and wiser men and wiser women.

But additional incidents may be recited to show how others appreciated the power and influence of the Order in those days of its prosperity, when it held a vantage ground for a short while, and lost it only from lack of education and discipline, perhaps never more to be fully regained.

Confidential price-lists of manufactured articles were issued to the Granges, perhaps once a quarter, in small pamphlets of from eight to ten pages. A leading newspaper in New York City proffered to print and circulate one hundred thousand copies of these price-lists to the Granges, if it were allowed one page for its own advertisement. The postage alone on this circulation in sealed envelopes, as the editor proposed, would have amounted to six thousand dollars, besides the paper and press-work.

A city in the West proffered a splendid building as a donation to the National Grange, if they would locate their headquarters permanently within its limits. Another proposed to furnish all necessary office room free of rent, and an annuity of five thousand dollars for five years, for the same boon; while the City of Washington, through a company of her best citizens, only wanted to know what other cities would do, that she might "go one better," to prevent the removal of the headquarters or Secretary's office.

Transportation companies seeking national legislation, Congressional lobbyists, and every imaginable enterprise that depended for its existence upon public favor, supplicatingly approached the Order to secure its favorable indorsement, but without success, for the Grange, actuated solely by principle, ascended a higher plane, and rejected every approach as an insinuation that they were purchasable.

Scarcely had we grown to these huge proportions as an Order before mutterings of discontent were occasionally heard, like the rumbling of distant thunder, and anon a storm cloud burst upon us, which tested the elasticity and strength of our fraternal bonds. Lack of discipline was everywhere manifest. Jealousy and envy began to crop out among the rank and file of the Order, and, rising like a gaunt and bloody specter, shook their gory locks in the faces of the leaders and demanded a distribution of the funds then in the treasury of the National Grange. To appease this unreasonable demand, the faint-hearted, constituting a majority of the voting members of the National Grange, yielded to the clamor, and voted to disburse gratuitously fifty-four thousand eight hundred and twenty-five dollars among the subordinate Granges throughout the Union. This gave but two dollars and fifty cents to each Grange, a sum far too small to be of any material benefit, and therefore the aggregate expenditure of that large amount in this manner was an extravagant squandering of the funds of the National Grange.

Other causes, too, threatened discomfort to the Order at that time. In the confusion of an unprecedented organization we had left the gates ajar, and designing men from every avocation of life had crept into our ranks. Men whose capital was invested in enterprises inimical to the farmer, and whose farms were perhaps their garden-plots, were received into the Grange under the plea of being interested in "agricultural pursuits." Schemes were devised for engaging in all kinds of manufactures as Patrons. Grange agencies were established in all of our cities, where the agents proposed to serve both producer and consumer, buying in the cheapest market for one, and selling in the highest market for the other, and guaranteeing satisfaction in both cases. Everybody wanted to join the Grange then; lawyers, to get clients; doctors, to get patients; merchants, to get customers; Shylocks, to get their pound of flesh; and sharpers, to catch the babes from the woods.

One Grange was organized on Broadway, New York, with a membership of forty-five, representing a capital of perhaps as many millions, and composed of bank presidents, wholesale dealers, sewing-machine manufacturers, and Wall-street speculators; the only member who could lay the least claim to having an interest in agriculture being a merchant who owned a house and lot in the White Mountains, where he usually spent his Summers. A similar Grange was organized in Boston; and in New Jersey, near New York City, a Grange was found, in fair working condition, with a General of the Army as its Master, a stone-mason as its Secretary, and the owner of a grain elevator as its Chaplain. These wily men, of course, sapped the very foundation of the Order, and rendered it almost lifeless in more States than one.

The executive committee were untiring in their efforts to counteract these depressing influences. Appreciating the completeness of the organization and comprehending the power of members, they attempted practically to execute in every way possible our "declaration of purposes." They visited the manufacturers of the United States who supplied the markets of the country with such articles as farmers needed, from a scooter plow to a six-horse engine or a parlor organ, and explained to them fully the purposes of the Order, proposing to concentrate the purchases of the Grange where the greatest discount was obtained for cash, for the Order countenanced no method of dealing except upon a cash basis. In no individual instance did they fail to secure a reduction of from twenty-five to fifty per cent upon the article purchased. These reductions and the amount of our purchases startled the middlemen. Reapers that were selling at two hundred and seventy-five dollars were reduced to one hundred and seventy-five dollars; thrashers at three hundred dollars were brought to two hundred dollars; wagons that had been selling for one hundred and fifty dollars fell in price to ninety dollars; sewing-machines that commanded seventy-five dollars and one hundred dollars fairly tumbled to forty dollars and fifty dollars. And so with every implement that came within the wants of the patrons.

These reduced prices were secured under the seal of the Grange, and were enjoined upon all members of the Order as "confidential," when printed in the price-lists already alluded to. But the greed of avarice was incapable of secrecy, and covetous Patrons, hoping to obtain still better bargains, revealed to outsiders these contracts between manufacturers and themselves, and thereby damaged both of the contracting parties. One point, however, was gained, for the reduction in price once secured was never lost.

The executive committee attempted also to inaugurate a system of crop reports, which, after a trial of only six months, proved more reliable, more expeditious, and more satisfactory than any system then in operation or since devised by the Agricultural Department of the government. It was as follows: The subordinate Granges were requested to meet as nearly as practicable on the first day of the month. There were then twenty-five thousand subordinate Granges scattered throughout the Union, and located in every State but Rhode Island, which never has had a Grange upon its soil. Twenty-five thousand circulars were then printed, containing questions concerning the farm and its products, with sufficient blank space for answers to these questions. One of these circulars was mailed to each subordinate Grange early enough to insure its reception before the monthly meeting. Anticipating this circular, each Patron went to his Grange session prepared to answer as far as practicable all questions pertaining to his farm or his neighbors' farms, when the latter were not members of the Order. Immediately upon the assembling of the Grange each member reported to the Secretary, who, after adjournment, collated and compiled these reports and transferred his aggregated result to the printed circular, which he mailed to the executive committee at Washington City. By the fifteenth of the month these reports, or a majority of them, were received here. A sufficient force was engaged to make a compilation of these, which was transferred to an aggregated sheet, and this sheet at once printed, and as soon as practicable mailed to the Granges in an envelope containing another sheet of questions, so that when the Grange received the consolidated report of the first circular it also received another series of questions different from the first, but all pertaining to the farm and its crops. The National Grange paid all the expenses of the system, including the postage upon the replies returned from the subordinate Granges. As an evidence of our expedition we reported on the first day of a certain month in 1874 that Pennsylvania grew more wheat per acre, and New Hampshire more corn per acre, than any other States in the Union, and thirty days thereafter the Agricultural Department of the Government reported the same facts as original discoveries. The theory of our system was perfect, but its execution was too expensive for private enterprise. More than once were we hindered in our progress by the inability of the Government to supply us with postpaid envelopes as rapidly as wanted. In those days there were no mail carriers or city deliveries, but the Post Office Department of this city extended us the courtesy of sending their wagon daily to Grange headquarters for our mail.

The executive committee also published for the use of the Grange a set of coöperative rules, based upon the Rochdale system of coöperation, which were greedily clutched at by the Order, but were not universally utilized because of the opposition of the Grange agencies previously established upon a commission or joint-stock plan. To master the Rochdale system we procured all their publications, which brought us into communication with the coöperators of England, who became inquisitive about the Patrons of Husbandry, thus effecting a correspondence which resulted in our sending a deputy to England, who introduced the Order there, and organized some subordinate Granges among the farmers of that country. Subsequently the English coöperators sent three of their best representative men to the United States, authorized to effect if possible a reciprocity system of exchange of products with the Patrons of Husbandry. That commission and the executive committee of the National Grange held consultations at Washington, St. Louis, Louisville, and Atlanta, which resulted in a proposition from them, that they would erect their own warehouses in New York City, Norfolk, Charleston, and New Orleans, and supply them with every article of clothing and every farm implement needed by Patrons, and sell the same to Patrons at a discount of ten per cent less than the same articles of like quality could be bought for in this country, and that they would receive in exchange every variety of farm product at the ruling market price, *provided* the Patrons of Husbandry would concentrate their purchases upon the Rochdale coöperators. This proposition was not rejected from any patriotic motive, but it was not entertained, because the executive committee were not competent to control the purchases or sales for a single subordinate Grange.

The consequence of our efforts at coöperation was the establishment in many of the States of the Union of coöperative stores, some of which are quietly but certainly saving to-day thousands of dollars to their customers.

In its incipiency, the Grange movement was not popular in many sections of the United States, even among farmers, and notably was this the case in the South. For a few years succeeding the war that people were greatly harassed by secret political associations, which had a tendency to widen the breach, if any existed, between the races. The Grange, being secret and confined to one class of citizens, was accused of introducing political machinations, that augured trouble to the community; hence many citizens, not a few of whom were farmers, discouraged its introduction. Other farmers, South as well as elsewhere in the United States, condemned the Grange as a woman's rights institution, because women were received as voting members into the Order, while thousands everywhere, with significant emphasis exclaimed, "What do farmers want with women in a secret society?" And yet still others of peculiar religious idiosyncrasies (and not Romanists either), set their faces against any and all secret associations of any character or for any purpose whatever.

There was little difficulty in removing most of these objections when an opportunity was afforded to explain the purposes of the Order, for although upon the surface there appeared obstacles in the path of the organizer, there was apparent to every observant man a readiness, a willingness, aye, an anxiety in the agricultural mind of the country for organization of some sort. The Grange literally "filled the bill," for its constitution positively inhibited the discussion of political or religious subjects during its sessions; it did not ask the farmer to *send* his wife or daughter to the Grange, but invited, yes, urged him to bring them, and thus protect himself against evil and vicious associations, for where woman graces an assemblage with her presence, virtue presides; and our esoteric cavilers were easily silenced by the assurance that a semblance of secrecy was necessary to let farmers in and keep non-farmers out; but it was a mere semblance, for the secrecy did not extend beyond "a ceremony of initiation, which binds us in mutual fraternity as with a band of iron, but although its influence is so powerful, its application is as gentle as that of the silken thread that binds a wreath of flowers."

With these cobwebs swept aside, it was amazing how rapidly the scales fell from the eyes of our inquisitors. From the Potomac to the Rio Grande, from the Golden Gate to the Hudson, and even on into the pineries of Maine, and across the border, throughout the length and breadth of the Dominion of Canada, farmers fairly leaped, as with one preconcerted bound, to the upholding of the Grange standard.

I have already confessed my inability to define the term "agricultural education;" with humility I make the further confession, as a representative farmer, that an agricultural education is not an accomplishment possessed by the average American farmer; and further, that the shrewder, quicker, more crafty, and perhaps better educated classes of American citizens are neither professional nor practical farmers. And where farming and planting is the avocation of a majority of our citizens, I know it is almost impossible to say who is or even who is not "interested in agricultural pursuits," to use the language of the Grange constitution. Hence, with the public mind ready and waiting to seize upon some form of organization, as it was in 1873 and 1874, and with the hurly-burly rush of this majority class into an association admitting all who were "interested in agricultural pursuits," the wonder to my mind is, that the Grange was not perverted from its legitimate purposes by the admission of those whose entrance to the fold, if not sought for sinister ends, was certainly not intended for the aggrandizement of the farmer or his vocation. Frequently had it to bear the odium of other men's sins, when denied the opportunity of correcting a misguided public opinion. For instance, there existed in Illinois and Wisconsin or other sections of the Northwest, at sundry times, agricultural clubs, composed of men who could not or would not join the Grange, whose province seemed to be to wage war against transportation companies. Anathemas thick and heavy were hurled upon the Grange for making this attack, whereas every Patron of Husbandry knew that the Grange, as such, was not a participant in the fight from beginning to end. To say that Patrons did not sympathize with and rejoice at the result of this contest, would be admitting their complaint of grievances as ill founded; but as an organization, they could not have participated, for such a course would have been in violation of their organic law.

The keel of the Grange ship was well laid. Its majestic sides were ribbed by the mechanism of profound thought. Its spars braced by fraternal cords have never been shattered by the fury of the storm. Its sails are still whole, and have been whitened by the friction of popular criticism. Often has it buoyed in turbid waters. Still oftener has it glided gracefully and triumphantly over the billows of prejudice that lashed so furiously under its bow. To-day it floats in placid waters. Its haven has not yet been reached, nor will it be until every farmer in the land shall have received some of the benefits of its launching.

The harvest of improvement which the American farmers reaped during the prosperous era of the Grange, and which is still ripening in every State of this Union, cannot be limited to a monetary valuation. The social elevation, the moral improvement, and the educational advancement have been beyond comprehension. These three grand purposes are never ignored nor forgotten from the moment the initiate closes behind him the outer door of the Grange hall, until by death or from other causes he dissolves his connection with the Order. Every precept of the Order is elevating and improving. The steps taken by the applicant in his passage through the four degrees that must be conferred upon him before he is acknowledged to be a Patron of Husbandry in good standing—all have this tendency. He who enters the fold must begin with the rudiments of his vocation, and be taught that "he who will not plow by reason of the cold, shall beg in the harvest and have nothing."

Beginning as the humble *Laborer*, who clears the forest, or digs the ditch, or prunes the vine, or turns the sod, he is instructed that all honest labor is honorable, and has the doctrine inculcated on him that he must "drive the very plowshare of thought through the heavy soil of ignorance, and thus prepare the mind for the growth of knowledge and wisdom." Advancing one degree, he becomes a *Cultivator*, when his moral nature is educated and refined by repeated assurances that he who intelligently cultivates the growing plant is brought into close companionship with his Creator. "As we see the beautiful transformation of seeds into attractive plants, we have but another lesson of the wondrous works of God; and if the beauties of this world, when rightly viewed, offer so much of the magnificence of the Creator to charm us here, what must be the sublime grandeur of that Providence above, not made with hands but eternal in the Heavens."

Nor do the lessons of encouragement cease when the *Harvester* is warned that he must reap for the mind as well as the body, because nature has made nothing in vain. "Wherever she has made a habitation, she has filled it with inhabitants. On the leaves of plants animals feed, like cattle in our meadows, to whom the dew-drop is an ocean without a shore; the flowers are their elysian fields, decorated with cascades, and flowing with ambrosial fluids." Hence, the *Harvester's* duty is to cultivate an observing mind, for it is delightful to acquire knowledge, and much more so to diffuse it.

But he who harvests must not rest content, until he has by lawful means attained to ownership of the products of his own toil, and thus become an *Husbandman*; who, while he was passing practically through the hardships of a farmer's life, and has had them emblematically riveted upon his moral nature, has learned to look with careful solicitude upon children and encouraged in them a love of rural life, by making its labors cheerful, for what children see makes the most lasting impression upon them. "We may tell them of the pleasures and independence of the farmer's life; but if their daily intercourse with us shows it to be tedious, irksome, and laborious, without any recreation of body or mind, they will soon lose all interest in it and seek employment elsewhere. We should therefore strive to make our homes more attractive. We should adorn our grounds with those natural attractions which God has so profusely spread around us, and especially should we adorn the family circle with the noble traits of a kind disposition, fill its atmosphere with affection, and thus induce children to love it."

But the attractions of a farmer's life are not within the keeping of the *Husbandman* alone. It is not his exclusive prerogative to fashion and shape the character of those plastic youths, who in the future are to wield the destiny of our country. It is the mother's influence that molds the child into noble manhood or bewitching womanhood. Therefore the founders of the Grange, reverently approving the Divine injunction, that "it is not good that the man should be alone," introduced woman into the Order; but in doing so they required her to enter as a *Maid*, whose station in the order involves the common and lowly duties, preparatory to advancing to all that is most honorable and useful. As *Shepherdess*, she is admonished that it is her sacred duty to reclaim the wandering, as well as to keep in safety those in the fold. And as *Gleaner* only to glean the good seed, remembering "that our associations in life are the fields in which we reap." And thus when she reaches, through successive degrees, the responsible position of *Matron*, she is solicited "to wear garlands of noble deeds, that shall adorn her life on earth, and be crowns of rejoicing in immortality."

Thus it will be seen, that the Grange is a family where the father's manhood, the mother's devotion, the brother's affection, and the sister's love are so cultivated and developed that they reach out beyond the purview of the family circle, and embrace with fraternal kindness every member of the Order, practically obeying the injunction of our Saviour when he said: "The second commandment is like unto it: Thou shalt love thy neighbor as thyself." This is the fellowship to be found in the Grange, and it is the fellowship of the noblest character. Twenty-nine days in the month social differences, moral convictions, or political prejudices may estrange Patrons of Husbandry; but when on that thirtieth day of the month they meet on a common level in the Grange, all these alienating features are dissipated.

Is it any wonder then, that farmers are attracted to the Order? Nay, verily, the greater wonder is, that every farmer in the Union is not an active colaborer with those of us who are desirous to so impress the advantages of the Grange upon the agricultural mind of the country, that it as an organization may never be defaced by neglect, injured by prejudice, nor destroyed by ignorance, but may go on prospering and to prosper until it shall merit the fulfillment of its own selected motto, "*Esto Perpetua.*"

THE CATTLE INDUSTRIES OF THE UNITED STATES.

By Hon. J. B. GRINNELL, Grinnell, Iowa.

Our bovine animals are represented by one thousand two hundred millions of dollars. Their shelters and the lands—meadow, pasture, and grain fields on which their food is grown—are worth two thousand millions of dollars; the annual production of butter, cheese, and beef, proximately, nine hundred millions of dollars. Cognate and closely related to this great industry there are essays on stock management, treatises on cattle diseases, special pleading for favorite breeds, florid general descriptions of lands in the market suitable for herds; but, so far as known, for the novitiate and general reader, there is no late and comprehensive discussion and statement as to this popular and profitable industry. I have waited in vain for one with more leisure than is allowed me to supply an urgent want, and now yield, with diffidence, to the earnest solicitations of those enthusiasts, like myself, whose valued friendship is less distrusted than their judgment.

By way of preface, the writer may disclaim having breeds to champion, high-pedigreed animals for sale, lands or railway stock on the market, yet he is in sympathy and interest with the farmer; an owner of various breeds, and for many years an impartial student of values and adaptations. He is just returned from a trip of thousands of miles through the New West, of personal observation, and in search of the most eminent herdsmen from whom to gain facts, experiences, and opinions worthy of public mention. Brave sons of farmers are restless on the limited area of the old home, not less than the ambitious and rich denizens of the crowded cities, and these it is my aim to inform by a multitude of counselors in regard to a field of enterprise allied to the romance of the frontier and a rational employment under the stimulus of promised competence. Grasses, climate, topography, and facts regarding adaptations of lands, transportation of beeves, and whatever is deemed of mutual interest to patrons of railways and those corporations, will be noticed.

The Greek *Auxo*—representing the bovine, and meaning "I increase"—had a significance not limited to early times, when the prosperity of individuals was indicated by the amount of cattle they possessed; hence the worship of the golden calf at Sinai was natural, and pointed to that which was of value in the mind of the idolater. What less than a Christian aspiration is the desire of our enterprising farmers to be possessed of that in which the mirror of the best reflects both pleasure and profit in ownership.

Oriental representation of wealth was in "much cattle." Job's fabulous thousand yoke of oxen has more than a parallel in individual ownership on our Western plains, where but a decade since the elk and the deer grazed unmolested. Now a single ranch loads a train of steers for the shambles, the animals often pausing on the way to be fattened by corn from the rich fields of Iowa and Illinois. A drive of ten thousand head from the West and South is not an uncommon affair. The cattle interest has kept even pace with the advancing civilization in the world's history, and more emphatically so in our own country, where noble ambitions and princely fortunes have been allied with the more humble devotees of improved stock and pure bloods. Railway extension has broadened the vision of the herdsman, who has recognized their utility, and the corporations themselves have a direct interest in the expansion and profits of our animal industry. An increased home consumption of beef, our proven ability to compete with profit in the markets of the world and to supply the demand, give high promise of stability and rational indulgence in great expectations.

IOWA AND THE CENSUS.

I may name with an apostrophe the proud mention of the State of my adoption. Unrivaled in substantial gains and a fitting example of progress, she points the way for the ambitious and intelligent of other States, perchance inviting comparisons, whereby the truth may become more apparent. Older States have a history, written by their own children. Ours has not reached that eminence, being but a youthful member of the family of States. Nor have her citizens been able to compete for the best animals and purest bloods, but they are entering upon a new era befitting a State thirty-five years in the Union, when the true confession is—a paradise of financial mediocrities, meaning none sordidly rich and few wretchedly poor. Neither the South nor the East supply their own demand for butter and beef. King Cotton reigns in one section; the artisan and the forge and the loom in the other, promoting natural and profitable exchanges—meat for capital and skill, bread for brawned labor.

The Empire State, so long a model in diversified industries, and holding a proud preëminence in the making of butter and growth of bullocks, now resigns her honors with the graces of a true brother, combining the gravity of age with the consideration of a father. The gain of New York, with all the inducements of high prices in goods and animals in the last decade, was six per cent, while that of Iowa was one hundred and thirty-one per cent, and in numbers she is only exceeded by Texas, while in values exceeding any of the States. And this from what small beginnings, and under circumstances how adverse. Go back forty-two years. Our cattle were, in round numbers, thirty-eight thousand, or near one animal to each one thousand acres of our area. In 1850, one hundred and thirty-six thousand; in 1860, six hundred and thirty thousand; in 1870, eight hundred and sixty-nine thousand; and in 1882 not less than two millions. The appreciation in values has been in a higher ratio than that of numbers, there being many herds of an average value of one hundred dollars each, and single animals worth thousands. Forty years ago there was not a farm stocked with blue grass nor a well-seeded meadow, the early settlers being still under a delusion that this was no grass country. The western portion of the State was not sectionized, and by Congressional legislation one third of our present area was deemed uninhabitable by our race, and resigned to the red man as his future hunting ground. This tract embraces an agricultural district where there are now cultivated farms, princely breeders, prosperous towns, and populous cities. The cattle were scrubs, and the idea of good butter from prairie grass was not entertained. Railways were so remote that corn-fed cattle would shrink to lean stockers while driven to precarious markets, by way of the lakes to Buffalo, or the Mississippi to New Orleans.

Even now not one half of Iowa's thirty-five million acres are utilized, and the eminent adaptation of its soils to nutritious grasses is not widely known, except in the older sections, where close feeding has supplanted the native grasses, and clover and timothy seem rooted to stay. By common consent of those conversant with the excellence of our beeves, and the quality of our creamery butter, where pure and abundant water is the rule, this young State, now to the front, cannot be surpassed, if our lands are reclaimed by drainage, and there is a study of the adaptation of breeds, and a resort to those methods which secure the best results in the dairy. In this connection I cannot fail to mention the enthusiasm of Col. R. M. Litler, an officer of the National Dairymen's Association, who, in and out of season, has stimulated our dairy interests. He gives the number of Iowa creameries as five hundred, the annual product of butter at eighty-five million pounds, which, at twenty-five cents per pound, is equal to twenty-one million dollars, one half of which is exported, leaving a revenue of over ten million dollars for our butter alone, to which may be added from two million dollars to three million dollars from cheese exported. The relative increase of other States in dairy products is in this order: Minnesota, one hundred and twenty-one per cent; Wisconsin, fifty-five per cent; Illinois, thirty-five per cent; and, measured by the product of thirty-five dollars from a cow, those in Iowa, Minnesota, Wisconsin, and Illinois earned the last year the fabulous sum of one hundred million dollars. The preeminence of Iowa in her cattle industry and dairy products invites the mention of other States, like Kansas and Missouri, where there are the favoring conditions of climate and soil, and prepares the way for history, facts, and experiences of residents of States and Territories which have recently been visited by the writer.

HISTORICAL.

It is not mere tradition that the cow came over in the Mayflower. We have not a record of her blood, but she has ever been linked with the healthful rearing of children, and we cannot doubt that they were famous milkers. In 1619 four cows and a bull were, after a long and dangerous passage by sailing vessel, landed in Virginia from Ireland. These were the first domestic animals seen in America, which was but twelve years before the Pilgrim Fathers touched Plymouth Rock, and two years after their landing there was an importation. From 1631 to 1634 Captain John Mason imported from Denmark into New Hampshire the animals which laid (according to Mr. Charles L. Flint, a high authority,) the foundation of the native stock of New England. Our fathers were too much engrossed with the felling of trees, guarding against the savage, erecting school houses, and warding off cold and hunger, to give good care to the stock, which was doomed to degeneration in these western wilds. It lost most of its title to high blood, if early values and descriptions are to be credited. Ours was an uneven race, for at that period in the Old World those bloods, since famous in this country, were better fed and sheltered than the poor herdsmen. Sir Hugh Smythson and his compeers claim that, at the settlement of Jamestown and Plymouth, the Bates stock had royal care; that the best we have has an unquestioned pedigree for nearly three hundred years, and that only by importations did our stock show improvement. Youatt's work may be consulted by the curious, and our devotees of bloods, and breeders inheriting the enthusiasm of their British ancestors, will resort to the Herd Book for details and facts we may not incorporate here.

Colonial agriculture made an early effort for the increase of cattle—as it meant home-made shoes, butter, and beef; the two latter, as articles of food, then accounted luxuries. Oxen were bred for activity and strength, and were of more utility in clearing forests than horses, and on meeting with a casualty among stumps could with economy be utilized as beef. It is the common opinion that the Devons predominated in our early history, combining hardihood and good milking qualities. When matched for the yoke they were fast walkers, and it was an incident of the early times, even as late as a hundred years agone, that wedding trips were made by New England pioneers north on sleds drawn by oxen. The first boast of the farmer and the largest representation of personal property was in his cattle, and from the Genesee Valley of New York to northern Ohio and the West, no farmer is deemed to have been successful if not owning a herd, or a number of cattle proportioned to his acres, and suited to the pail and the shambles.

Let me not enter the lists for a part in a discussion of the merits of distinctive breeds, but rather present those facts not within the reach of the general reader, and the rare instances of devotion to the bovine races which is at once creditable to the judgment and an index of professional pride. William, Prince of Orange, received a marriage present of cattle from his father, and it was a high token of nobility then to own an animal in a royal line—and they were the finest decorated walls where a portrait of a bullock was hung in the best style of art. Lands too low or barren for rich pasturage held only second rank; hence the boast of rulers of numerous herds, and those of unrivaled pedigree, when ornamenting a landscape view of the richest acres.

Our ancestors naturally imbibed the spirit of the Old World, and when possessed of wealth it was often used to improve the stock (which had degenerated under our coarse fare) by judicious crossings. George the Third raised stock men to a peerage. The Collings brothers, Earl Spencer, Bates, Booth, Bakewell, Fawkes, and others, aspired to and were worthy of equal honors. This foreign spirit was contagious. Our own Webster, after a visit to England, loved to smell the breath of oxen coming up sweetened from his salt marshes by the coast; Clay, "Gallant Harry of the West," never wearied in efforts to secure meritorious animals, which were his pride, importing three Herefords in 1817 at a cost of six hundred dollars, thus linking his name with eminent owners; and the late Brutus Clay, of Kentucky, a modest gentlemen and a judicious breeder, and Cassius M. Clay, so high an authority that he was called to the platform as a lecturer in the Yale College Agricultural Course, whose language we may hereafter quote. I find Samuel Thorn, of New York, worthily mentioned as the bold purchaser of Short-horns, and the successful breeder who enjoyed the proud distinction of having first sent back to England improved stock which opened the eyes of princely breeders to the possibilities of this country. Morris, whose family is associated with our Revolutionary history, had previously joined his herd with that of Becar, and fifty years ago laid the foundation of many noble herds. Latham and Corning, of Albany, Vail, of Troy, and societies formed in Ohio and Kentucky, made large purchases, conferring benefits on their brother stockmen which are beyond computation. Mr. R. A. Alexander, of Kentucky, and his family, should not be omitted from the roll of honor, as later purchases give full evidence of forecast and pluck. Wadsworth, of Genesee, N. Y., Henry Holmes, of Greenwich, the Cornells, of Ithaca, A. B. Allen, of New York, L. F. Allen, of Buffalo, Church, Angell, Campbell, and A. B. Conger, of Haverstraw, the latter paying twenty-nine thousand eight hundred dollars for three animals at the celebrated sale of the Campbell herd at New York Mills in 1873, all did their part for the general good.

In the Old World, Bates and Booth were the names which marshaled partisans under their respective chieftains, stirring blood not cooled during the lifetime of a generation. This lacks a perfect repetition in our history, yet brings us to the warm debates of the present era. At the fat stock and cattle shows in the West, where T. L. Miller, of Beecher, Ill., with his Herefords, and J. D. Gillett, of Elkhart, Ill., with Short-horn beeves without regard to pedigree; and D. M. Moniger, of Albion, Iowa, the breeder of the celebrated Lexington and Short-horn cattle, which have won the best prizes—they and others contend for popular favor and medals, and whose favorites may be noticed in the later mention of distinctive breeds.

EXPERIENCES OF STOCKMEN IN THE WEST.

Opinions do not make facts; verities should be the basis of opinions and mold all philosophies. An expressed opinion has a value according to the standing of its author. Spontaneous opinions, devoid of the coloring of an interested buyer or seller in the world's great market of matter and mind, are most esteemed, and those of this prime quality I present, that "by the mouth of two or three witnesses every word may be established." Facts from many States and Territories are hereafter incorporated, and, while they may not be in accord in details, nor alike full, yet are substantial and reliable, from the simplicity of their authors, who were prompted by a single desire to impart information, and not from hope of reward. Names and the homes of herdsmen may open the way for correspondence—perchance a visit—resulting in a good investment, or embarking in an attractive industrial pursuit.

In a journey from the Potomac to the Hudson, and westward for one thousand eight hundred miles, in December, 1881, I kept an open eye for grazing stock. They were invisible, save as seen sunning in the inclosed barn-yards, until reaching the North Platte, Nebraska, two hundred miles west of Omaha, at the longitudinal line which separates the prairie grasses killed by frosts from the region of bunch and buffalo grasses. This chosen pasture has in its low grounds a natural adaptation to meadow grass, and verdure, ripened by frosts, yet sweet and nutritious. The long, wide North Platte seemed a proper barrier to the herds from the north driven southward by storms, and the South Platte a restraint to all the stock found between the two rivers—neither stream fordable, except in the driest seasons. Here is the palatial residence of the Hon. Guy Barton, and ample barns for his full-blooded Devons, with hundreds of tons of hay for an emergency, and large tracts of land fenced with wire. It was at this point I began my observations, and being further west than Horace Greeley twenty years before, was reminded of his diary, compared with mine, at the same distance west. Here is his record:

"*Topeka.*—Beefsteaks and washbowls (other than tin) last visible. Barber ditto.

"*Manhattan.*—Potatoes and eggs last recognized among the blessings that 'brighten as they take their flight.' Chairs ditto.

"*Junction City.*—Last visitation of a boot-black with dissolving views of a board bedroom. Beds bid us good-by."

Mr. J. Kieth fed at North Platte, for Barton & Dillon, at Columbus, four hundred steers, which put on three hundred and fifty pounds in eight months, weighing from one thousand and fifty to one thousand one hundred and fifty pounds at three years. He estimates that there was a loss of twenty per cent the last Winter for want of preparation for unusual storms. J. E. North & Co., Columbus, have four thousand five hundred head sixty-five miles from the North Platte, and hold that they did not suffer a loss of over two per cent in 1880. R. H. Henry has a ranch on Loupe Fork, three hundred and fifty miles from Columbus, on which he keeps four thousand head. He gives preference, from regard to safety and profit, to Texas stock as the foundation of a herd; has put up only ten tons of hay, not one feed for the entire herd. Mr. Henry drove twenty-seven thousand sheep from Oregon the last season, costing in that locality one dollar and fifty cents each, and is now feeding fifteen thousand head on corn for an Eastern market, with good results.

Union P. O., Big Spring, Neb.—Mr. G. E. Thompson, from Washington County, Pa., for many years the first county in the Union in sheep husbandry, has on his ranch here three thousand sheep. They average eight pounds of wool each. The original stock was California ewes. He imports his bucks from Pennsylvania, one of which shears forty pounds of wool and only a twelve months' fleece. (This is the largest story I ever heard uttered by a credible witness.) The sheep are afflicted with scab, but no foot-rot. Cattle dislike sheep-walks and they do not thrive well together.

Wilton Creek, Nevada.—Honorable J. H. Hoppin I met as a passenger on a wedding trip westward. He went from New York to California, handled stock in Nevada ten years, drove herds of cattle from the Indian Territory and Texas to California and Nevada, thence on eastward to Wyoming and on to Montana. He says sage-brush land can be cleared off and become good grass land, raising fair crops often without irrigation. The drive east into Montana was six thousand sheep in 1880, ewes and lambs, a distance of seven hundred miles. In 1881 he drove five thousand head of wethers one thousand two hundred miles and sold for mutton feeders at Laramie. Nevada is not so snowy as Wyoming, and one fourth the land is good pasturage, with a fair supply of water. Mr. Hoppin says the census return is no full indication of the amount of stock in the West, since most owners take the benefit of a doubt. The best stockmen put up hay, yet a large proportion trust luck and sustain heavy losses, as in the year 1879, yet not so large as in 1880. He keeps two thousand head of cattle and ten thousand head of sheep. A car of stock costs one hundred dollars from Laramie, and two hundred dollars from Nevada to Chicago, which is a special rate. He has an Oregon ranch, where there is good water and abundant grass. The drive from Nevada northwest is on the old California route through South Pass until the North Platte is reached. Oregon stock which does not go south will naturally come east on the Union Pacific Railroad at the Granger Junction, and with profit will tarry in the Nebraska or Iowa cornfields to bring the top of the market. Cattle owners lost money in 1880, but made well in 1881. It is his estimate that one hundred and fifty thousand sheep were driven east from southern California; seventy-five thousand from northern California; and eighty thousand wethers from Oregon and Washington Territory, in 1881. From four thousand to ten thousand were driven in each flock, at a cost of twenty-five cents each, and, crossing the desert of seventy miles, flocks kept their flesh on sage-brush. Mr. H. puts up seven hundred or eight hundred tons of hay for reserve, incloses meadows, leaving the rest of the land open pasture, and holds that by a readiness for storms, with hay and more care, there is greater profit. A division of herds will be found in the end to be necessary.

S. S. Chase, Esq., U. S. Marshal for Idaho Territory, has a large personal knowledge of Idaho, Washington, and Oregon east of the Cascades, and judges that Idaho has fifteen million acres first-class grazing land. Snake River can be irrigated for a distance of five hundred miles, and for twenty miles on either side there is good water found by digging. The Solomon River Valley is one of the best grazing sections in the world—hay unlimited. There was no loss on Snake River by starvation in 1880. Between the mouth of Raft River and Eagle Creek bridge are twenty thousand head of strange cattle, not including ten thousand head of local cattle. He reports that a Mr. Haas drove one hundred and twenty thousand head of cattle from Oregon to the East, grazing at North Park on the Yellowstone, where good grass was abundant. Mr. J. H. Pincheon has a wide acquaintance and reports from Ogden, on the U. P. R. R., north for one hundred miles, good grass and water for irrigation, with a continuation of good qualities up Snake River, then a sand country. Northward, crossing the Idaho line, there is more grass and water, which improve westward on Solomon River. Fort Hall reservation has very fine pasturage.

Utah.—C. Layton, elder of the Mormon church, has a farm of two thousand acres on the railway, twenty-two miles north of Salt Lake, crops one thousand five hundred acres, and raised twenty-four thousand bushels of wheat and barley—wheat, twenty bushels to the acre. He uses a header for harvesting; no irrigation; keeps two hundred head of cattle on the range, and brings in beef in the Fall, leaving stockers out all Winter. These he gets in the Spring. He fed one hundred-head for Winter beef on lucerne hay, which grows two tons to the acre. Cattle bring three dollars a hundred, gross, and weigh one thousand three hundred pounds when three years old. He keeps one thousand head of sheep, which are kept out on the range and get a good living on white sage. Mr. Layton bought railway lands at three dollars to five dollars an acre, which are now worth thirty dollars without irrigation. The land bare, or with bunch grass, will grow wheat. He was born in England; came here in 1842; has fifty in the family, including children and grandchildren; has four wives. The community does not sanction the use or sale of intoxicating liquors.

William Jennings, of Salt Lake, Superintendent of Zion's Coöperative Mercantile Institution, has been in Utah twenty-nine years; owns two thousand five hundred head of cattle in Salina, southern Utah; has not seen them all for six years; sold the last season five hundred and fifty head, at thirty-two dollars each, averaging three years of age; sells steers in August and September; no irrigation in the valleys in which they are pastured. A good share of his steers are Canada and Kentucky breeds, crossed since 1870. The losses on the range were reported six to seven per cent in 1880; heavier in 1879, owing to short grass and deep snow—equal to twenty-five per cent. The cattle interest is now prosperous—not half the number there were three years ago. Kentucky blue grass does well where there is water; the ravines are damp and soil rich. The Herefords are preferred as being the best beef stock. In his experience the Short-horn cows lacking attention and with too much milk, lose their udders. For a common range of stock Devons are well enough, but he wishes to keep up the size by a larger cross. Steers of the range average one thousand four hundred pounds each. Mr. Jennings keeps full bloods, and has twenty-five milch cows at his home, and has a breeding herd. He says, if the Government would part with its lands at a low price, there would be buyers who would irrigate and increase the production tenfold. These are the extraordinary weights which he gave for show animals treated to the best known food for cattle: One steer, killed in December, 1880, at three years and five months, weighed, net, one thousand six hundred and twelve pounds; a heifer, at four years, bred in Kentucky, proving barren, weighed, beef and tallow, one thousand seven hundred and fifty pounds. The steer killed, the owner avers, was better than any killed in London in 1880. Mr. Jennings was at the Birmingham Show, in England, in 1876, and there was not on exhibition stock equal to that reared in Utah.

Prof. M. E. Jones, botanist, of Salt Lake, has visited all sections of Utah, and finds but small tracts of lands that will produce well without irrigation, and but two thousand square miles capable of raising grains and grasses by irrigation. There is no buffalo grass, as in Colorado, but much grass on the mountains and by the foothills, which keeps cattle the year round. Stock is lean in the Spring and beef blue. A wild wheat grows in the valleys, called blue joint, which is cut for hay. All the grasses grown in the States will grow in Utah by irrigation. Horses and cattle do well most of the year, but do not thrive if kept with sheep. They have two seasons, Spring and Fall, for branding and rounding-up. No hogs in Utah. The Mormons hold most of the water and land that can be irrigated, except east of the Wasatch Range. There are but four hundred and forty-seven square miles of land under cultivation, and this is confined to narrow strips along the base of the mountains and by the streams.

Haley, Idaho.—This is the residence of Hon. H. P. Turner, of the Idahoan Mine. It is on Wood River; production, silver and lead; sent out one thousand tons to Salt Lake for smelting in 1881, and has four thousand tons of low grade ore waiting for a railway, the survey of which is thirty miles distant. Judge Turner has been six hundred miles up and down Snake River, and reports it an all-Winter range; meadow, with meadow lands and water; timber scarce; uses wire fences. Some sections of Snake River are well timbered with pine and fir. Stock wintered well in 1880.

Bridge, Cassia County, Idaho.—The residence of J. Q. Shirley. Was from New York; has been in Idaho and California for thirty years; drove cattle from Missouri to California in 1853, consisting of six hundred head; then, in 1869, brought cattle from California to Montana, in a drive of seventeen hundred head; residence since has been in Raft River country and Southern Idaho; is now the owner of twenty-five hundred head of cattle, three hundred horses, and six hundred sheep; cut five hundred tons of hay, and fed steers to ship to California, via Central Pacific Railway, in January. The grazing part of Idaho is a superior stock country. Moves cattle from Summer to Winter range, and has but few losses. The calves are separated from the cows in Autumn. In breeding horses, he crosses the common stock with Clydesdale and English draft, with good success. The sheep first kept were coarse-wooled; of late has crossed with Spanish Merino bucks, and secures nine pounds of wool from a sheep. The weight of steers at three years is about eleven hundred and fifty pounds, without hay. The Devon cross, though not as large, is a good one. Stock always active and fat. The stock of all kinds gather round the Warm Springs, and make a circuit in range of thirty or forty miles. The Short Line Oregon Railway strikes a thirty-foot vein of coal forty miles west, then Warm Springs, and farther on Soda Springs. It follows a fine Summer range and the great cattle trail from Oregon. After crossing the Utah and Northern Railway, there is good grass, but heavy snows; extra range in the region of Fort Hall, and good grass down Snake River to Oregon. Eastern Oregon will develop every way in cattle, which will naturally go southeast on the Union Pacific Railway. Cattle are scarce and high; yearlings are worth ten dollars each. It is unsafe, say on the Laramie plains, to be without hay. I have done driving, and had rather brand calves to make money, caring well for young stock. There is a great advantage in wintering stock where there is timber.

Laramie.—Here I found D. C. Holcomb, Esq., who shipped two thousand head of steers from Laramie, weighing eleven hundred to twelve hundred pounds each. J. B. Hutton shipped one thousand head, that sold at fifty dollars each in the yards. These were raised in the lowest water country, Southern Wyoming. Sudleth & Montgomery shipped twenty-three hundred head to Chicago, and sold at an average of four dollars and fifty cents per hundred pounds; average weight, twelve hundred pounds each. The North Park has not only good mines, but a fine range for cattle, and they came out well in the severe Winter of 1881. This park has about two thousand square miles, and on the range there are three thousand horses and ten thousand head of cattle, encircled by grand mountains, which are covered with timber, and the peaks with snow.

Cheyenne, Wyoming Territory, the headquarters of Swan Bros., from Indianola, Iowa. They began in 1874. The range is north and northwest of Cheyenne, on Chug Water and Sabille and Laramie Rivers, the northern limit being one hundred and twenty miles. They have a breeding and home herd at the head of Horse Creek, numbering three hundred. It is their plan to keep bulls up; also to sort out young heifers with calves. In 1881 they branded eight thousand calves, and have a total of fifty-three thousand head. They admit a loss in the Winter of 1881 of eight per cent. Sold in Fall of 1880, eight thousand steers, at thirty-four dollars per head; have fifty thousand acres fenced, and will inclose more. Hon. A. H. Swan is of the opinion that ten cattle die for want of water to one from cold or hunger. A horse herd is kept of four hundred head, consisting of riding stock and Clydesdales, which are bred at a great profit.

Messrs. Sprague & Warner, the princely grocers of Chicago, have a herd of many thousands, south of the Union Pacific Railway, in Nebraska, which bring large returns. They do not admit heavy losses, and are enlarging their business. They talk of the Oregon branch of the Union Pacific Railway, which goes through the richest part of the country west, via Boise City to Baker City, keeping north of Snake River to Fort Hale. It will open a wide field for ranchmen, and develop mines which are rich.

Colorado.—Wilson & Tucker of Deer Trail, Col., have been west fourteen years, all the time in stock dealing, some in real estate in Denver. Their herd contains six thousand head, crossed with Short-horns and Herefords. Short-horns are best to cross on Texas stock. Hereford bulls must be cared for in the Winter. Have had no experience with Devons. Hay is not cut for cattle. Wean the calves in the Fall. They have no windmills, but they could be used where there is no surface water in the Winter. Grass will grow without irrigation on bottoms. (I saw eastward of Deer Trail many stacks of hay and inclosures of wire fence.) The ranchmen put up hay for horses, sheep, and bulls. The best stock for us—" Rustlers." Bloods will lay down in the storms and die. With small herds, and care of young heifers and the bulls, a better per cent of calves. We only see our cattle in the Summer, and mean to keep them from crossing the Arkansas River on the south. There was a big loss last Winter; many short from twenty-five to fifty per cent. I sold off the old stock and moved the rest on the Republican, where there was less stock and good grass. Sold eight hundred steers, four years old, weighing one thousand two hundred and seventy pounds each; three-year-olds, one thousand one hundred and fifty pounds each; shipped at Deer Trail. Own two hundred and fifty horses; have one hundred saddle horses; cross-breed mares with high bloods. (I saw samples of stock in fine order and of good style.) Not less than fifty thousand head of cattle drifted last Winter to Arkansas River and Los Animas. They round-up at Pueblo and region, and go north after being gathered. In the storms, snow is so blown as to leave bare spots, else the cattle would perish. The company has sixty miles of wire fence to hold steers. It costs nine cents a pound for wire at Denver. Water in Eastern Colorado is got at a distance varying from twenty to ninety feet.

J. H. Hittson, of Deer Trail, Colorado, has been here seven years; his father, just deceased, came from Texas eleven years ago; had fifteen thousand head in 1880. Mr. Hittson put in seven thousand five hundred dollars capital in 1874, buying one thousand Texas yearlings. He closed out February, 1878, with near two thousand five hundred head, which sold for thirty-nine thousand five hundred and twenty dollars, a net gain of thirty-two thousand dollars. Put up no hay, except for horses. Owned no land, and cattle ranged from Nebraska to Arkansas. There is plenty of water in streams on the range. The steers and all cattle belonging to the estate were sold this year; shipped one hundred car-loads to Kansas City. The grass is good at Republican and Arkansas Rivers. He uses Short-horn and Hereford bulls; likes the Hereford best. Half-breed crosses are the strongest.

Gives a preference to Texas stock for making money, as they grow larger when brought north.

In the older Eastern and Middle States beef is but an incident contrasted to a general purpose in the West. The old cows and worn-out oxen are brought to the butcher's block. Few except the more promising calves for milkers are spared above from one to four weeks, and the milk is shipped to the city or made into butter or cheese. So few are raised from calves that thousands are brought annually from the West to recruit the herds of milkers, which of late are the grown calves sent by rail to Illinois and Iowa, and return by rail after two or three years' growth.

The rule East is good feeding and in warm barns or sheds. On the passing trains the cows seen by the straw stacks, with a stable seal (manure) and a smooth coat, indicating the philosophy of the owners as to the economy of warmth in saving feed and manure, which is so trivial a concern on the Western prairies. The work in stalling and cleaning out stables is considerable, and it does not seem easy to escape the vassalage of from five to six months in feeding, and the expense of ten tons of hay or its equivalent, at a varying cash value of from eight to twenty dollars a ton.

This expense leads to a close study of adaptations and a severe selection of cows, for only good ones will keep a balance on the right side of the ledger. The high cost of grain prevents full feeding, with rare exceptions; and when breeding stock is shown in competition with that better fed West, it lacks the size and showy features which captivate the beef-growers; hence Eastern fancy breeding for Western markets has not been a marked success, however faultless the pedigree.

To furnish milk for three million of people or more in the cities at a profit has taxed fully the faculties of the inventive indomitable rural Yankee nation. The cows he has groomed, the milkers and feeders are trained, and to a minute the milk cans are at the railway platform. Thus to an adept in bargains and milk-pooling contracts, and a candidate for the best customers, economical feeding becomes a necessity to maintain the fiscal standing of the dairyman. Steaming food has had a run; cutting hay and straw and stalks has been more in vogue by the use of horse-power and steam; and of late a system of ensilage is awakening wide and earnest thought. This is the preservation of green fodder in pits for Winter feeding. Mr. C. W. Mills, of Compton, N. J., and others, claim that by the use of corn sown, and cut when green, a cow may be kept the entire year for twelve dollars, as against eighty dollars by the old methods. Plans for boxes and pits are simple, and the construction so cheap that great results are predicted from these processes, now without our province to elaborate.*

THE CATTLE CENTERS.

West and south of Chicago, for four hundred miles, the methods of stockmen are only objectionable to the staid brothers of the hills, rich valleys and suburban homes in the East, who see nothing to commend but the expansion and the money made; and this last incident, it must be admitted, has grown out of these late favoring conditions—barns or sheds for the stock, butter and cheese making, the use of better cows, and realization of good prices for beef and dairy products. Twenty years ago a dry and warm shed in Iowa was the exception and not the rule; scrubs the rule and not the exception. Heifers were saved for their beefy looks, and not for points as milkers, and were milked by chance or in accord with the whims of owners. Steers were fed on the sidehill, where the rains would wash away the manure, while the bushes or a rail fence was all the protection afforded the stock, eating from the ground with the swine that reveled in the droppings.

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*See Journal of American Agricultural Association, Vol. 1, a minute description of Ensilage by Francis D. Moulton, in the best style of a clear and attractive writer.

Barns are now requisite, and many of the large feeders prefer sheds to the narrow inclosures, and corn constantly kept in the boxes, to measured rations. This is their reasoning: "I have not capital to put into a barn with ample hay-lofts, and stable room for hundreds of steers; nor can I find the men who are inclined to stable cleaning. Besides, save in extremest of cold days, the corn-fed bullocks do not choose close quarters, but the open field and run, with bracing air." A stomach full of corn, they reason, will furnish the caloric, and greater gains are reported by open feeding than by housing, thus avoiding barn cost and stable cleaning. A good outfit is, say for one hundred head, a yard built on a slope, with a shed opening to the south, built of straw and poles or boards, inclosed in a five-acre lot. A windmill pump or a running stream is a necessity, with boxes, three feet up from the ground, for corn to be broken in the ear or shelled. The undigested corn will feed and fatten two shoats to the steer, or, if large, one hog to the steer is the rule. Spring and Fall feeding is now more common and most profitable, avoiding resistance to the cold, and requiring less grain where access is had to good pasture. Soaking the corn is found to be great economy, and the swine are healthy and thrive as by no other known feeding process. If the Fall and Summer beef markets are lower, there is found a compensation in less grain required and more rapid fattening of both cattle and swine. Fair beef is made by two hundred days feeding, which should put on from three hundred to four hundred pounds of meat and two hundred pounds of pork, by the use of one hundred bushels of corn, or a half bushel a day. If the basis is a stocker of a weight of one thousand pounds, and the beef from four dollars lean to five dollars fat the hundred when corn-fed, and a gain of pork equal to two hundred pounds, this brings a net return of forty cents a bushel for corn, which is above the average price in the crib at the railway station for the last ten years. This process of feeding saves the tedious hauling of corn to market, and is a great equalizer of the value of corn-lands, whether near or distant from railways. I estimate on the basis of one hundred beeves, a saving of three hundred days' service with a man and a team. Our enterprising feeders who ship hundreds annually have no special advantages over the small farmer, since he may grow the corn, and do his own work, and have access daily to the records of the markets, and accompany his stock to Chicago, or sell it at his pleasure.

COMMON FEEDING

Engrosses the largest number of the farmers who are located in the newer portions of Missouri, Iowa, Minnesota, and Eastern Nebraska, and Kansas, where there is a dependence on native grasses, and east of the longitudinal ranges of Winter grazing on bunch or buffalo grasses. They have a rude but not unprofitable system under an improvement of breeds, and the introduction of butter and cheese making, and the growing of a larger acreage of corn. The plan is to secure cattle to consume all the corn-stalks on the farm as well as the wheat, oat, and barley straw, and make up for any deficiency by moving the native prairies, which, except in rare dry seasons produce a good burden of hay. That cut on the lower grounds is of less value, but brings the older stock through in fair condition, with an allowance of corn in late Winter. Large herds are made up in a given locality, and placed in charge of one man with a horse; he is able to keep from three hundred to six hundred out on open prairies, near good water, at a cost for five or six months' attention of one dollar a head. Their thrift depends much on the quiet maintained, and if yarded in not being kept long in confinement. The small young stock do not grow in a large herd, and cows with calves have an unequal chance in a mixed herd; indeed, the improved methods require a separation of the sexes, and a return to fresh grass after the first severe Autumn frosts. The heifers are bred at two years of age, and the steers find ready purchasers coming three years of age, to go into the meadows and feed lots in the older sections where corn is abundant, at the cost to the purchaser of an average of three cents a pound or thirty dollars a head, while the heifers are sent to the butcher or kept for milkers. The practice of allowing the calf to follow the cow has been quite common, and is now the rule with the large farmers where creameries and cheese factories are not introduced. These practices grow out of the want of capital by the land owners; to stock and fence their lands and erect buildings; but are to be commended in eating out the native grass, which is good for the land owner, and consuming stalks and straw by the cattle rather than to be wasted by fires, leaving only impalpable ashes to be driven by the winds, and of no value to the soil. The cheap and effective barriers found in wire fences are fast inclosing large tracts of land, and yearly narrow the pasturing range, and invite the sowing of tame grasses ready for full feed when the steers are most apt to take on flesh. A tract of raw prairie is worth from one to three dollars an acre more after a few years of close feeding, it being easily broken, and sure to bring a good crop the first season; hence the enterprising stock-grower, having grazed the non-resident lands, is able, by the help of a rising family, to enlarge his boundaries by purchase, and keep his sons near home with full employment; and the ownership of a quarter section in fee is not an unworthy ambition for father and son.

After a quarter of a century of observation amidst all the fluctuations of markets, I know of no sober, pains-taking, enterprising breeder and raiser of cattle on cheap lands in Iowa until maturity that has failed by reason of droughts, floods, storms, or disease, or who has not found a fair return for his labor by improved cattle, and the enhanced price of land; attaining in many instances not only full compensation, but ample provision for days of decrepitude—even wealth. I have seen the breeder of fast horses left without credit; ambitious sheep-owners, from diseased flocks, sold out by the Sheriff, and an army of speculators reduced to claiming a homestead exemption, and their neighbor, courageous and prosperous as a rule, clinging to his herd.

Ranch is a Spanish word, early signifying a hut, later, a place of resort for cattle-men, now with a wider meaning: a large cattle establishment; distinguished from hacienda—which is a cultivated farm or plantation. But how obtained and what the requisites for the one most desirable? They are open to the world on all unsectioned tracts of our domain, with this qualification, that he who has pioneered may have selected the best and is entitled to all implied in a squatter's claim and his sovereignty—a tract of land not always clear as to its boundary, but held as property under border regulations, and by the title of occupation which it would be presumptuous for a stranger to controvert. Hence, a spirit of greed and large claims, many extending ten or fifty miles by ten miles, and, when covering too great an area, there are convenient if not real partners, in herdsmen and adventurers, who are glad of a home if not rich in cattle. Springs are highly valued as in Oriental countries, and a good camp by a clear never-failing stream is a small fortune. Next, a ravine with a dense growth of bushes or timber, with hills, bluffs, and winding ways called canyons, where stock flee in storms, choosing the high ranges for Summer pasture. Ranchmen have a scale of prices for their possessions, not more variable than those of the Eastern land dealer, with abstracts and warrantees, and are ready to leap into the saddle on finding a customer and push on, with or without a herd, to "pastures new."

The best of locations, where there is isolation and no past or no prospective strifes, as between the herdsmen of Abraham and Lot in old Canaan, are worth from hundreds up to several thousands of dollars. In the encroachments societies are formed, where the metes and bounds are fixed, and a trespasser is not to be countenanced; yet strong parties combine for mutual advantage in retaining extended ranges, and to facilitate herding. Localities nearest the railways and supply stations have the preference, and those near Indian camps and reservations are the least desirable, save near what is the well defined Indian Territory, where cattle are grazed in large numbers for a small sum. No adequate estimate of the number of cattle on the ranges can be formed by a view from the moving trains, since the timid wilder herds are in the distance, and in the stormy and cold seasons they are in the shelter of brush and crowded in the ravines and draws, where the water gurgles and the light snows are driven off by the winds. The mortality would be fearful but for the animal locomotion which sends them to these places of refuge with quite as keen instincts as those of certain feathered tribes that make their flight to congenial climes. There are deep local snows for months, but small bare spots are visible, the only resort to satisfy their hunger. Then a dry atmosphere does not allow the snow to cling to the stock, which they shake off with as decisive and effective motions as the mustang throws his rider. There is another fact in the ministry of nature that inures to the comfort of the bovine and prevents loss in storms. The buffalo of the North and the Siberian fox have a coating of hair and of fur suited to their wants, and I found that herds acclimated were covered with a dense coat of hair, long, oily, and compact, with white spots below the surface answering to the dandruff in the human hair. This mitigates their suffering by cold, for as bovines they are wanting in the good sense of the horse, which uses his limbs in exercise to maintain vigorous blood circulation, while the cow, shivering, braces up inactive, waiting for any fate. Hence I judge it is not a mere fancy that the decendants of Spanish or Texans in a long line of ancestry inured to storms, and without protection by their owners, are the best "rustlers," and give proof of these qualities so desirable where there are inadequate shelters from great exposure to storms.

The grasses found indigenous in the various localities are so similar that when you know one variety you know all. A dry Autumn prepares them to resist the action of frosts. They are found to have the qualities of good hay, being sweet and retaining fattening qualities until a new crop starts in the Spring, the old of necessity of less value as exposed to rains, when they waste and rot. Then there are two kinds of sage brush eaten in an emergency, the white variety being in the Spring in a measure free from the Autumn bitter taste, and nutritious. It grows nearly a foot high, and is of great service when snows are prevalent. The buffalo and the deer are said to relish and fatten on it, as cattle will certainly. Animals unacclimated, when not crowded, make a good growth and fair beef on our vast western ranges, where there is but the aspect of barrenness and a picture of desolation. It is not to be inferred that there is uniform good pasturage, for in certain localities there is absolute barrenness, and so much sand that vegetation is not possible. Alkali sections are not myths, and "bad lands and staked plains" have a meaning.

Cattle are not improved as they might be by a Winter separation of the sexes—the weaning of the calves and the feeding of heifers, weakened and emaciated by early maturity and the rearing of a calf. Cannot the death-rate be reduced, and there be a larger show of "the survival of the fittest?" I find few to approve present methods, which are in disregard of economic plans and Nature's laws, proclaimed since the days of Moses. There is to be partnership of "pains and gains," and fewer boasts of herds numbering many thousands. A lottery-like pursuit in the ownership of property out of sight and beyond control is to be exchanged for a regulated, established industry, which the presence of railways makes practicable, facilitating exchanges, moving stock, and bringing the windmill and fencing material from afar to the cattle farm. The railways have a direct interest in a dense population and in many herds to tread out the bunch grass, that by cultivation and the enriching by irrigation, there may spring up in its room grasses forming a compact sod. This is everywhere the foundation of pastoral wealth, and, in association with the higher plane of rural life, inviting into partnership the mechanic and mill owner; stimulating the raising of trees in adornment of now desolate plains, and the erection of school-houses and churches, as in the past, and forevermore to be the accompaniments of the best American society, in its march to a higher civilization, not found in the saddle of the ranchmen, as a rule, nor promoted by the excitements of the long drives and the round-up revels.

THE ROUND-UP

Is a Spring and Autumn revel of stock-owners, herdsmen, cow-boys, and all interested in a brand in a given section of the country. It is the hunt for beef-steers, calves for branding and separations, according to ownership, for a remove to the Summer range. This rural episode grows out of a dispersion of the herds before storms and in search of food or water.

With a driving herd a round-up is made every night, to keep them together; but the rounding-up to separate herds is generally done at a time designated by law or determined by commissioners chosen in each county for the purpose. In Colorado the commissioners publish in the Spring the places for the round-ups for every day during a period of six weeks, usually beginning in the middle of May. The places are generally a distance of twenty miles from each other. Every ranch or neighborhood then fits out its squad of men to search and separate the cattle. At a given hour the wagons and outfits are seen starting from every ranch in the State and Territory toward a common rendezvous on the unfenced plain. The squads are divided into various parties, each properly officered, and the exciting work begins. First the horsemen begin at the edges of the pastures, defined by the foot of mountains or banks of rivers, and sweeping around the boundary, start the cattle toward the rendezvous. It often takes four, five, or six weeks to get the wanderers in. During that time, with driving the cattle by day, and night-herding or keeping them from scattering at night, no man gets over five hours' sleep out of the twenty-four.

Good feeling and hilarity is the rule, and high-toned courtesy—a director and judge—settling disputes on the plains beyond the shadow of the blind goddess Justice, where litigation is less common than in many densely populated sections—Judge Lynch deals with cattle thieves and marauders in a way that offenders "tell no tales;" yet a fleet horse often eludes the pursuers, and saves the rider from summary punishment.

A well established brand is extensively printed in local papers, showing the steer, ear-cut, or hip, shoulder, or head marks, and associated with a liberal, well known name, has often a large money value; hence the combinations and blending of capital under one firm.

It is reported that a small owner is apt to have no more consideration shown him than there is shown to the small fish in the sea, and he is quite willing, if with only feeble courage, and equipped with a low-necked steed, to be absorbed for a proper consideration.

The unbranded cattle, or those of unknown owners, are called "mavericks," and in some of the States they go into the county educational fund, but usually are slaughtered for the sirloin beef and the hides, which are sent to the towns. Semi-annual divisions are becoming more common under the better policy of weaning calves, separating the young milkers, and inclosing separate breeding herds of both sexes, where the steers may be quieted for shipment and the more valuable cattle kept from the large and often drifting herds. I saw many steers inclosed for the January market, and the owners of the better classes of cattle, I observed, were happy in showing their fences and large ricks of bright hay, ready for the emergency of deep, crusted snow.

OUR STOCK COUNTRY GEOGRAPHICALLY.

We have every variety of desirable soil and climate, and in Nature constituent natural elements of an empire but partially developed, not uniform in adaptation to cattle husbandry. The sugar and tobacco lands and the cotton plantations of the South have their uses, but are not the natural abode of the herd. Our older States have led the way, but are now crowded and allured to other industries by the competition of the prairie corn States, and the facility with which beef is grown in the Far West and thrown on their markets.

What all our older States aspire to do is to raise the best stock for the dairy, obtain a good price for surplus beef, and attract the West to become purchasers of their fine bloods for breeding purposes. So long as it seems necessary to use expensive fertilizers to insure crops, and buy hay worth from ten to twenty dollars a ton, the young stockman turns his steps toward newer lands and cheaper acres. These he finds in the Central West, and abundant room for large capital and encouragement to enter the lists with many thousands now prospered, and in sections where the climate is not more rigorous than far East; railway freights reasonable, and well watered, rich virgin acres seeking purchasers at from ten to forty dollars the acre, according to nearness to railways, towns, schools, and churches.

In producing milk the East has no rival in the West, and in the manufacture of strictly first-class butter finds a reasonable profit in the choice of cows, and by late methods of feeding promising great results, especially under the ensilage system, of which Mr. J. B. Brown, President of the New York Plow Company, says:

> "What I enjoy most to think about in this connection, is the increased comfort that it will bring to the animal kingdom, and to humanity everywhere. Eight acres, with this system, will produce as much animal food as one hundred did before. A farmer with twelve children and a hundred acres can divide up his land and give to each of them a farm that will, with a silo, support them and their families as comfortably as the whole farm would with a barn. We are increasing in population with the rapidity of geometrical progression. Ensilage practically increases the size of the earth twelve times at least, without making it inconveniently larger or disturbing the solar system. It is a reservoir of Summer sunshine and Spring showers, improving with age, and is, to a great extent, a preventive of the evils of drought and famine."

If this is not a rose-colored view, the cows are to be better fed and supply billions of pounds of better milk to the cities, and a surplus of butter and cheese for export, from millions of cows rating better year by year, and far superior to those kept in the newer States, where beef has for years been the great concern in the herd. The corn States *par excellence*, after so full a mention of Iowa, my own State, are well advertised by superior butter made under the creamery system, and the large and model beeves far below the demand. It was deemed public policy to abolish the office of Commissioner of Emigration that there be no haste in peopling our new countries—in their native state grazed to some advantage, and will soon be required under the laws of population, changes of occupation, and the dispersion of children of American families. I only mention the good room remaining in an area of ten millions of acres in Iowa, and an equal amount, with not equal corn adaptation, in Minnesota, Kansas, and Nebraska, where the cattle industry has advanced in the last decade equal to one hundred per cent, and there is room and promise of even a larger development in the next ten years.

THE DAIRY INTERESTS

Have a wide bearing on cattle raising, and no American industry is at this time exciting more earnest attention. A low estimate of our annual product of milk from thirteen million cows is five hundred and twenty million dollars. How can the cows be improved as milkers is the problem in the corn States, and not impair their beef qualities? This finds one answer: select families of the beef breeds that are proven good milkers. The combination of these qualities is possible in a high degree, and is strictly a practical and not a speculative question. Poor milkers, as a rule, lose their owners money, and have been the great occasion of discouragement in butter and cheese making. Those for sale are often found worthless, and extra stock is cheap at a large price. Statistics show that there has been an increase in revenue from the cow in 1880 over 1870, of ten dollars a head, which indicates improved stock, better feeding, new methods, and better prices. Creameries are springing up through the Central West, and there are five hundred in Iowa alone where ten years before there were none. This plan gives the farmer the benefit of milk for his calves and pigs, the cream being only taken to the factory, where, under a system, with ice, improved implements and good packing, there is a uniform article commanding fancy prices. Good cows are now salable at from forty dollars to sixty dollars each, for the dairy, while poor ones are not wanted at any price.

The exports of butter and cheese will, on the best foreign authority, continue to increase, if furnished at a moderatee price and of superior quality; and the same reasoning applies to the consumption of milk in our towns and cities—a large demand, if at low price to the masses and of unquestionable quality. Good dairying success eastward is more dependent on the milking qualities of the cow. The average one has no record, while the best show great possibilities and stimulate rival owners. I have before mentioned the Holstein cheese cow as giving eighteen thousand pounds of milk in a single year, and the great cattle sale of history. It would be a great slight to the Jersey Queen of Barnet as a butter cow if I did not give her record. She is a Vermont cow, originating in the herd of Messrs. Fairbanks & Co., St. Johnsbury. Her milk for seven months and eleven days weighed nine thousand and sixty-nine pounds—of butter made five hundred and fifty-five pounds; an average of fifty pounds of milk daily, and a promise of eight hundred pounds of butter for twelve months.

A RESUMÉ OF THE FACTS CONNECTED WITH THE NEW WEST.

I must not omit the late Thomas Carlyle, who, often quoted, said of our country, "The cause of your prosperity, discounting all democracy and political rubbish, is, you have a great deal of land for a very few people." I do not accept this plausible solution of the occasion of our prosperity. Observation and reflection, on the contrary, lead to a far different conclusion. The pioneering of agriculturists for fifty years in this country, and the later adventures of gold hunters for twenty-five years past, before the era of Western railway building, has been a direct drain on the wealth of the nation, involving losses to those on the frontier, known only through the sad experiences of the pioneer who has all the disadvantages of an invading army far from the base of supplies. His energies are paralyzed and profits reduced for want of that obtainable in the vicinage of shops and stores best equipped and stocked, where there is competition, and artisans of diverse skill awaiting employment. A choice of vocations is not left hundreds of miles distant from consumers of his agricultural products, and the producer in a new State is forced to study a concentration of coarse products into valuable ones which will bear long land carriage.

Hence it was quite natural for Pennsylvania grain growers distant from the ocean to set up distilling whisky, and when hindered to inaugurate, even in the days of Washington, a Whisky Rebellion not of slight moment, and this subdued, they and more Western agriculturists, to regain what was lost, set about stock raising with the great disadvantage of distance from markets, which compelled the raising of cattle that should have as a prime quality limbs for locomotion rather than well rounded quarters for beef. Swine were bred of necessity, not to gain adipose, but for that ability to make long journeys, which furnished such "delectable (?) company" for so many drovers and owners.

Wool was deemed quite too gross a product to be profitably carried to Eastern looms, and bankruptcy often followed the establishment of factories with costly machinery, imported artisans, and a higher rate of interest than in the older States for capital invested.

Thomas H. Benton asserted that every dollar carried from the rich gold mines of the West had cost two dollars, and labor which would have made a rich and fruitful garden of millions of acres, had it been expended on the soil. How statesmanlike to point out the track of the buffalo as Nature's route for the iron rail to the El Dorado of the West, which evoked an enterprise rich in reward to capital, far richer to the pioneer, and involving a broad statesmanship which now, by the facilities afforded to the miners, and an increased production of the precious metals, gives us that which has been the ambition of all votaries of Crœsus, the honor and profit of distributing the world's exchanges.

Andrew Jackson, fifty years ago, in the rural home of the Hermitage in Tennessee, had no device for farmers, in the isolation of that day, so promising as manufactures, and a tariff protection in their infancy, to develop skilled labor and invite capital. The picture of the poverty and desolation of the pioneer soon became less dismal by the use of the turnpike road and steamboat navigation, but did not raise the last generation to that plane of prosperity, comfort, and fiscal possibility now enjoyed, and within reach of the pioneer, through the facilities of the railway for travel and freighting products.

Carlyle, ignorant of the locality of our wealth, could not unfold the secret of its acquisition; found more in saving, in easy exchanges and industry, than in ownership of many cheap acres by unskilled and negligent farmers. He did truthfully say, in a fitting text for a volume on Economies: "There is not an Indian by Lake Winnipeg that quarrels with his squaw that does not affect the price of beaver throughout the world." The converse is true: there is not a successful trapper that does not affect the prices of beaver, nor a wise, painstaking herdsman that does not add to the material wealth of his country by improving stock, and those rare excellences which attract the enterprise and wealth of older countries.

What material concern is greater than the best methods of concentrating gross products into concentrated values? And this is cattle husbandry—turning grasses and grains into nutritious food of the best quality, in the briefest period, and at the least expense. Pure milk only will be tolerated; cream butter alone, and no doubtful compound; pure bloods for prepotency and beef above all praise. Thus honor is his shield, and ample profits a reward, from the high plane of a gentleman who leaves a legacy to his family beyond comparison. Ignorant of the ways of bulls and bears in the market, by the bovine he earns honest bread, and wins his way from the Herd Book to the page of heraldry. What an escape from the sorrows of an adventurer and the shame of losses in the pools of jockeys. Animal life is a profound study, taken with the study of food, which answers to the fuel for the engine that gives power and secures locomotion. A stomach is an assay institution; and with the laws of hereditary, the study of markets, and with the comities of gentlemen, he rises naturally into a high-toned, original character. The tenants of prisons would be few if drawn only from the ranks of cattle raisers. Tricks in trade would be rare if confined to pastoral life, since there is no idle brain for a satanic workshop. What so common to find as real gentlemen, an eclectic class, molded by simple habits and elevated association, rich in reminiscence, whether at farmers' clubs, on fair grounds, or on the frontier, where the rude elements of empire are warm and molding into form.

We should admit our deficiencies, and profit by the ways of older countries. It is plain that we lack cattle in numbers. For our domain, excepting Alaska, we have only one bovine for sixty-one acres, a paucity in numbers that so stimulated the owners that there was an increase of twelve million head in the last decade, where there might have been twenty millions but for the insane ambition to ship our bulky grains rather than condense their values in meat on our own soil. England has one bovine to eight acres; France relatively fewer—one to twelve acres. Germany, with less than fifty millions of acres, has fifteen million head of cattle, or one to each three and one half acres.

In carrying out this international comparison, it may be mentioned that Russia, deemed far below our country, has sixteen million horses, twenty-four millions of cattle, and ten millions of swine, and fifty millions of sheep. The United States has eleven million horses, thirty-five million cattle, thirty-five million sheep, and of swine thirty-two million—equal to the whole of Europe in *porcine* display and numbers.

The relative number of animals in different countries is suggestive at once of what our country lacks, and of its possibilities. None has such varied favoring temperature for the bovine; none so wide an expanse unoccupied, for our area is one third greater than that of Russia; and none in its newer sections equal railway facilities with ours.

One hundred millions of cattle can be kept with equal profit in our country to the twelve millions in our sister Republic, France—then allowing us one bovine to twenty acres, while by the last census we have for each of the animals, horses, cattle, sheep, and swine, not less than fifteen acres.

These approximate numbers from the latest authorities, home and foreign, show that during the last decade our relative gain was greater than that of any country, and far exceeded that of any period of our history.

The views of European statesmen, and the reports from our foreign ministers and consuls, taken with American agricultural literature in the magazine, and newspapers, show the wide and deep interest taken in animal industry, enlisting mind and capital hitherto dormant, and this with good reason, substituting care for the toil of the grain-raisers; a measure of certainty for the chances and vicissitudes of trade, blending the thought of the breeder and feeder with those attentions consonant with social elevation and refinement; dealing with animals that, amid the wasting of years, and blotting out of empires, have in their assertion of self-perpetuating, tenacious life, improved during the vicissitudes of four thousand years, becoming in every succeeding grand epoch more a necessity to their masters related to wealth, esthetic culture, and happiness. Even Iowa, during the life of a single generation, has acclimated and fed brutes of more cash value than all the flocks of Kedar, the horses of the Pharaohs, and the cattle depastured on a thousand hills; and this era of banks, steamers, railways, and progress, has furnished nothing more replete with interest, or more intimately blended with individual aspiration and a just State and National pride.

How grand is the question—broader than the schemes of diplomat; of more consequence than the policy of the Secretary of Finance, or appropriations of Congress. That we may be more fully impressed with the nobility of our rank attainable, waiting for success on earnest and honorable endeavor, I only hint at the breadth of the stock breeder. He must be a financier, not risking his all on an animal with paper promises so large with attorney fees that a poor crop or money panic will force his stock under the hammer. Our fiscal sails must be set for all seasons and spread regarding money resource and time, which mature stock as well as roses, never forgetting Poor Richard,

> "Boats large may venture more,
> Little boats near the shore."

A successful breeder has an artist's eye. He is to blend the beauties of each—to form the ideals at once captivating to the refined taste and in adaptation of superb qualities.

Bovine bloods have points for the dairy and for the shambles, and the artist blends forms in accordance with correct taste and utility. The horse has muscle for the plow, draft, and for the road; and a glance indicates the qualities of each in endurance and fleetness; and to bring forth the blending beauties of breeds, captivating to a refined taste, and of superb qualities, unchallenged as the animals in Rosa Bonheur's classic pictures, is our study; and this requires the keenest perception to espy defects, bold treatment and consummate skill in combinations where temper, style, muscle, and bone may be bred in or out.

Hence an artisan rearing animals for the world's great markets, whereof the buyers are critical, capricious, and exacting, has a graver task than that of Reubens, for the painter may recolor the canvas at will, more delicate in effect than that of Canova; he could at the next breath chisel the marble anew, while deformity in fold, herd, or stud courses in the blood corrupting many generations. We are creators under the laws of hereditary, and nothing less is becoming as citizens than an ambition worthy of knightly honors, earned by a Bakewell in the fold, and a Booth and Bates in the herd.

Our people are keen in invention, fertile in resource, and cherish a laudable ambition to rival princely owners in the purity of bloods, and the excellence of beeves. The long desired fraternal spirit is obliterating sectional lines and blending in pleasing harmony sections and States alienated by war, to be materially profited by the national family of 1900 A. D., numbering prophetically one hundred million of people, and owners of one hundred million of the bovine races.

In concluding this discussion it is fit that I should remind the reader that matter ample for a large volume has been condensed to the compass of a magazine article, which will explain the reason for so brief a discussion of many aspects of this great question. I should be derelict in duty not to express my obligations to all persons who have by letter, facts of experience, or opinions, contributed to the value of this paper. If strong language has been used in regard to oleomargarine, it was in the interest of the humble dairyman, and in reprobation of the devices of the sordid compounders who nauseate the innocent at the table, imperil health, and corrupt the very fountains of the streams which enrich by legitimate trade.

Our frontier herdsmen would not forgive an omission of the Indians in their cognate relation to cattle industry; and if I may lesson the tales of the border horrors by a calm discussion which will break up the tribal relations, mass our dusky wards, and by the presence of woman lessen the vices which now obtain in rude nomadic society, and save the savage from a lazy life and degeneracy, in a new departure where the conditions of comfort and protection are toil and obedience to the laws of civilized life, a seeming digression will be pardoned.

I shall have failed in my main purpose, if the opportunities afforded by the railroads for reaching our natural stock country have not been set forth sufficiently strong to stimulate many aspiring youth to take a deeper interest in cattle husbandry, and lead to the blending of their fortunes with those who would make the new west so attractive that "Heaven shall look down to see."

Wonderful growths, increased home and foreign demands for beef, great stock sales and immense gains, I place *secondary* to an elevating employment, found on rich pastures in healthful climes and in the presence of grand scenery, molding thought and life, where it is as honorable to earn a fortune as to gain it by inheritance.

Save in time of war or the period of depreciated currency, good stock has not reached so high a price as it brings to-day, and no period can be cited in the world's history when the labor of hand or brain promised more in results for brave and beneficent purposes; thus inciting those restless and aimless and weary with traffic to emulate the votaries of the herd in closing their career with generous comity and their hearty good deeds, which will please their children to recount, and their fathers to remember—an exemplary legacy—in the gathering shades of life's evening.

CATTLE IN THE UNITED STATES BY CENSUS OF EIGHTEEN HUNDRED AND EIGHTY.

We are indebted to Mr. J. R. Dodge, Statistician of the National Agricultural Department, for the following table, never before published:

States and Territories.	Working Oxen.	Milch Cows.	Other Cattle.
Maine	43,049	150,845	140,527
New Hampshire	29,152	90,564	112,689
Vermont	18,688	217,033	167,204
Massachusetts	14,571	150,435	96,045
Rhode Island	3,523	21,460	10,601
Connecticut	28,418	116,198	92,149
New York	39,633	1,437,855	862,233
New Jersey	2,022	152,078	69,786
Pennsylvania	15,062	854,156	861,019
Delaware	5,818	27,284	20,450
Maryland	22,246	122,907	117,387
Virginia	54,109	243,061	388,414
North Carolina	50,188	232,133	375,105
South Carolina	24,507	139,881	199,321
Georgia	50,026	315,073	544,812
Florida	16,141	42,174	409,055
Alabama	75,534	271,443	404,213
Mississippi	61,705	268,178	387,452
Louisiana	41,729	146,454	282,418
Texas	90,603	606,717	3,387,967
Arkansas	25,444	249,407	433,392
Tennessee	27,340	303,832	452,462
West Virginia	12,643	156,956	288,845
Kentucky	36,166	301,882	505,746
Ohio	8,226	767,043	1,084,917
Michigan	40,393	384,578	466,660
Indiana	3,970	494,944	864,846
Illinois	3,346	865,913	1,515,063
Wisconsin	28,762	478,374	622,005
Minnesota	36,344	175,545	347,161
Iowa	2,506	854,187	1,755,343
Missouri	9,020	661,405	1,410,507
Kansas	16,789	418,333	1,015,935
Nebraska	7,234	161,187	590,129
California	2,288	210,078	451,941
Oregon	4,132	59,549	352,561
Nevada	765	13,319	158,137
Colorado	2,080	28,770	315,989
Utah Territory	3,968	32,768	58,680
New Mexico Territory	16,432	12,955	137,314
Washington Territory	3,821	27,622	103,111
Dakota Territory	11,418	40,572	88,825
Idaho Territory	737	12,838	71,292
Montana Territory	936	11,308	160,143
Arizona Territory	984	9,156	33,843
Wyoming Territory	718	3,730	273,625
Totals	1,010,402	12,580,907	22,501,545
Grand total			36,093,854

LIVE STOCK INTERESTS OF THE PACIFIC COAST.

WRITTEN FOR THE CALIFORNIA "SPIRIT OF THE TIMES," BY L. WALKER, ESQ.,
SECRETARY DISTRICT AGRICULTURAL ASSOCIATION No. 1.

But very few, even of the intelligent readers of the "Spirit," realize the magnitude of the interests involved in the heading of this article or the labor in its compilation. In a general way they realize that we have been growing in the direction of the improvement of all domestic animals, and that Texas steers and mustang horses are less plentiful than formerly, but to what extent they have hardly ever devoted a passing thought, and yet the development has been so rapid as to practically amount to a revolution.

The displacement of the native breeds has been so rapid and radical, as almost to take the breath away from a sober conservative who looks abroad, after a few passing years, and swiftly generalizes that such animals "were and are not," without knowing or thinking of the underlying causes that have produced this marvelous change. It would be comparatively easy to trace these causes, but as this article has more to do with facts than the philosophy of breeding, we will omit the speculative theories, and take up the facts and events in something like regular order. And as anything like a history of the stock interests of our coast would be unsatisfactory and incomplete without a knowledge of the starting point, we will begin at the beginning. And as the horse holds the first rank in the economic development of nations and communities, as well as in the affections of mankind, it would seem the proper thing to put him first in order.

When the first Argonauts, athirst for gold, came hunting for the Golden Fleece, they found mountain and valley swarming with the native Spanish horses, commonly known as mustangs, forming no insignificant part of the wealth of the great Spanish dons, feudal lords of the soil, and in common use everywhere.

They were rarely used for purposes of draft, but for the saddle, and so plentiful were they that every Greaser boy, of any family pretensions, thought himself abused if he did not have the free use of a riding horse, and the youngsters almost literally leaped from the cradle into the saddle, and certainly felt more at home there than they did in their mothers' arms.

Every native rode horseback, whether the distance was measured by leagues or rods, as it was almost beneath his dignity to *walk* either in the pursuit of business or pleasure; and so scrupulous was he in this regard that he would walk a mile for his picketed horse that he might ride half a mile to a neighbor's.

He was used for everything except to pull in harness. He would pull heavy burdens, but they were at the end of a riata, with the other end in a turn round the loggerhead of a Spanish saddle and a rider in its seat. In this way we have many a time seen them jerk the dead weight of a bullock quite a distance, and haul wood and fencing materials where no wagon could go, and snake considerable trees down the precipitous sides of mountains that would nearly make a goat's head swim.

There has been a great deal of frothy nonsense written about this same native Spanish horse, by scribblers of the romantic school, who rave about the Arab and his flying courser of the desert. Such writers have always seen in the meanest and scrubbiest bucking mustang devil, a lineal descendant of the studs in Mohammed's stables, and very likely from the royal steed of Solomon. Perhaps some horses were brought over by the first Spanish adventurers and left to run wild, but these certainly fail to reasonably account for the vast hordes of wild horses that swarmed in countless thousands over Texas and the whole Pacific coast region. We have heard Colonel Hayes tell of a procession of wild horses that he once witnessed on the plains of Texas, that would, of itself, negative this story of his origin.

That the native horse was here in large numbers when the first Spanish adventurers landed, and long before, is a fact clear to our mind.

And his looks and characteristics have also been romantically colored by this same class of writers. The real fact in the case is that he was a very ordinary, very plain, and a very undesirable animal, except in a primitive condition of society and for the use of a pastoral people. He filled his place well, but he is not an animal for a progressive civilization, and so by the natural law of the survival of the fittest, he has given place to a horse answering the higher needs of society. He sadly lacked size, beauty, and a Christian character. They were of all colors under the sun that ever cursed or blessed a horse, and of colors in the most aggravated combination; in this particular taking rank with Jacob's cattle.

They did not, except in individual instances, exceed fourteen or fourteen hands and a half high, homely heads, ewe-necks, upright shoulders, badly sprung ribs, drooping quarters, and a general want of symmetry, with dispositions, in a majority of cases, treacherous and wicked. Much of the latter feature was doubtless owing to the treatment received at the hands of their conscienceless masters; but continued observation left with me the conviction that, like all savage races, they were deficient in brain power and its accompanying moral forces. To offset these inherent defects, he had the very best of legs and feet, was agile and sure of foot. He could go long distances at moderate speed, and live on scant fare; but it is entirely safe to say that he never had any elements of character or qualities that made him, under any circumstances, the equal of the American thoroughbred for saddle purposes, or the all-purpose horse for harness. He answered fairly the limited wants of a semi-barbarous race, and with that race he is dying out, and the world will not greatly miss either one of them. The Mexican mustang began his death procession as the advance column of the gold-seekers mounted the summit of the Sierras, and started down their western slopes to found almost a new empire. Trade and commerce demanded an entirely different animal, and the creators of this commerce brought the proper animals with them, in the emigrant horses, oxen, and cows, of almost all strains and breeds, but in the very nature of the services required, all of more than average excellence. The men who were the pioneers of the phenomenal immigration of the year '49 and the few subsequent years, realized to some extent, at least, the extraordinary demands that would be made upon their teams, and selected with discriminating judgment, the very best animals to be had for money, looking always to those characteristics indicating endurance and hardihood. Hundreds fell by the way, but thousands survived the hardships of the long overland trip, and gave us at once a large number of very excellent animals.

At this time, and for a long time after, useful horses were the demand rather than those for mere pleasure, and every horse was gauged by the amount of work he could do.

The demand for such animals grew apace, with the incurring wants of trade, and men went back and returned with large bands, chosen expressly for the California market, and they were always good ones.

As the most of them came from the Western States, a great many of the mares were infused with a liberal allowance of the stouter strains of thoroughbred blood, and this is now frequently cropping out.

For the heavy mountain teaming, large Missouri mules were in greatest demand, and teamsters paid almost fabulous sums to match up their teams, and in the palmy days of mountain freighting, before the era of railroads, the world has never seen the equal of the magnificent mule teams of mountain freighters; in many cases, consisting of eight and ten spans, none of which cost less than six hundred dollars the span.

But a time came when men accumulated princely fortunes, became tired with the excitement of mining, or with the cares of trade, and began to turn their attention to the more peaceful pursuits of agriculture, and to the luxuries and pleasures of home. Many of these men had owned race horses in the States, and they must now have some thoroughbreds of the old home stock; while others from the Eastern States, remembering the stylish Black Hawk teams of New Hampshire and Vermont, and others of the different local strains, begetting trotters and roadsters driven by the men of importance and standing in their native places, must have fleet-footed roadsters to pull their buggies in California, as another tangible evidence of new-born wealth, and the importation began, and has continued almost without interruption up to the present day, until we are at the present writing, behind no State in the Union, either in the excellence and variety of the many different strains of blood, or the excellence of individual animals. At first not much, if any, attention was paid to breeding. Men wanted animals already reared and broken for immediate use, and always something that could go *fast*—faster than the other fellow's trotter or team. Of course, with the advent of these roadsters, banterings and challenges followed, and then tracks and races in regular sequence. If we were writing reminiscences of early times, we should like to recall these old-time trotters, name by name, and thus enable the old turfites to live over again very many pleasant episodes and stirring events, and we have promised ourselves this pleasant task in future numbers of the "Spirit," but as we are not, we must pass along to notice the attempts at breeding our own roadsters, trotters, and race horses.

For years after certain stock horses were imported from the East, breeding was pursued with but little system, and with but little comparative success. In the majority of cases breeding fast horses was confined to the purchase of some horse of some local family reputation at the East, with a big name, and then advertising him for service. In most cases he could trot some, and then every one who had a mare with anything above a good gait for a butcher's cart, bred her with the confident expectation of getting, as the produce, an animal like Flora Temple or Dexter, and fed himself on dreams and visions of a world-wide reputation for it, and a small fortune in exchange for its possession. It must not be said that such expectations were not realized, and that disappointment followed, and a consequent disgust with breeding trotters, and the verdict that there was nothing in it. It will be understood that this does not apply to the same extent to the breeders of thoroughbreds, for here the path was plainer, and the successes more frequent.

Among the first experiments with trotting stallions, we do not remember any that made great hits in begetting speed, or that left their impress to any great extent upon road horses, with the exception of two or three.

Werner's Rattler for a time had quite a rage, and he earned his owner a good deal of money, but his progeny did not win much renown, nor were they a very desirable class of horses for the road. The same may be said of John Nelson, although he was a better horse, we think, individually, and his colts more useful horses, although our experience with them was they lacked uniformity—that is, bred to no particular family likeness—and had no particular inheritance of speed.

This is not so much to be wondered at, when it is remembered the class of mares in use for breeding purposes. In most cases these mares, when they possessed speed at all, had it by an accident rather than a family inheritance.

There were two of these early stock horses, however, that did a good service for the stock interests of this coast, and left their imprint for good on the road and track, and these were McCracken's Black Hawk and General Taylor. The latter was a son of the Morse horse, and was as gamey and stout-hearted as the best. A great many of his get were rather small, but they had the best of legs and feet—some of them speed of a high order, and no road was ever too long for them. We have always thought a few drops of the Taylor blood would make itself felt for generations. Like the Pilot blood, it commingles kindly and potently with all strains, and the Taylor mares have proved valuable as the dams of trotters and roadsters, and the blood should be carefully preserved, as time will certainly prove its great worth.

McCracken's Old Black Hawk was the sire of a number of fast trotters that made creditable records and scores of fine gentlemen's road horses.

Like the other members of this distinguished family, they were not large, but might, with great truth, be called "big little horses," and were almost universally pleasant and agreeable on the road; and the longer we live and observe, the more inclined we are to gauge the value of a stallion not by one or two sons or daughters of phenominal speed on the track, but by the average quality of his get on the road when harnessed to gentlemen's road wagons.

It is quite a common thing in the experience of all horsemen for a horse to be capable of going a mile in 2:20 on the track, and of repeating the feat again and again, and yet be a disgusting brute on the road, or in the stable. No gentleman wants to drive a slobbery, lounging horse to a buggy, or one that will lug his arms off, no matter how fast he can go. The horse for the merchant or business man to drive is the one that can go along a three-minute clip, if desirable, and if faster, all the better, cheerful and prompt in his attention to the driver's wishes, and that will return his tired owner home rested and refreshed, recreated, and on good terms with himself and all about him, and, as a friend puts it, not caring much whether he has a note in bank or not. These horses will be sought after, and eagerly purchased at remunerative figures, and the demand to-day far exceeds the supply, for they are comparatively rare animals in the horse market. The produce of the horse under consideration were after this type, and wherever you struck one he was most always good. His mares are another valuable element in the breeding establishments of this State, and the time is rapidly approaching when this same blood will be better appreciated than it now is.

Perhaps it will be thought that the old pacing stallion St. Clair ought to occupy a front rank among the early prepotent sires of the State. We all know what a success two or three of his mares have been in the Palo Alto stud, when mated with that extraordinary horse, Electioneer, but if we take out these, and two or three others, his success has not been very considerable, so far as our observation goes. We were acquainted with a good many of them, some twenty years ago in Sacramento County, and they were fairly thought of, but judged by their success on the road, we do not think they would take rank with either of the two others. Others may and doubtless will differ with those views, but if they are wrong, some one who knows all the facts will certainly correct us with proofs. Another horse that came here at an early date, has written his name in large type all over the State, and that horse was George M. Patchen, Jr., commonly known here as Old Patchen, and in the East as California Patchen.

His history is so well known that we need not dwell upon it more than to say that he was a prepotent sire, that his get were large and rangy, plain sometimes to the verge of coarseness, almost always taking a good road gait as a natural inheritance, and some of them possessed of speed of the first order.

They matured somewhat slowly, and like all of this kind, many valuable animals were ruined through the impatience of their owners to make trotters out of them too early, when more judgment, with added time, would have accomplished this result.

A great many stock horses could be mentioned that were not much known or talked about, that have contributed much material toward successful breeding establishments, in the desirable crosses which they afford.

We came very nearly passing over one of the most distinguished and most successful of all the early importations, and that is Whipple's Hambletonian. He was the son of Guy Miller, that General Withers, of Kentucky, thinks was the most promising son of Rysdick's old Hambletonian, when his limited opportunities and early death are considered. Without stopping to discuss this question, it is entirely within bounds to say that Whipple's Hambletonian is one of the most prominent and noted sires of his day. His speedy sons and daughters form a most brilliant galaxy, and through his daughters particularly, in the different breeding establishments on this coast, his form will grow brighter and brighter. Judging by his success here, it is our deliberate conviction that had his lot been cast, say in Kentucky, he would have been at the head of all the confessedly great stallions of the United States, and, as a matter of course, of the world; and, as we have observed his great hits, it has been to us a perpetual wonder that he was not more extensively patronized. Only last Thanksgiving day we took dinner with a friend, who has one of his four-year-old daughters that would make glad the heart of the anchorite. She is as lovely as a Mahommedan houri, in disposition simply perfect, and can speed a quarter in thirty-five seconds, and is as level-headed as a Front-street merchant. If we were buying a trotter, or a roadster, or stock horse, "dam by Whipple's Hambletonian," would be pedigree enough for us on that side of the house.

This is written *con amore*—for we don't own one of them (more's the pity)—never knew the owner of the old horse by sight, or am interested in any of the stock to the extent of a five-cent nickel.

It only remains to notice in this department the present condition of our breeding interests. We shall so far follow custom as to mention the runners first, although under protest, for, in our opinion, the time has even now come in equine history, when the thoroughbred will be accorded the second and perhaps the third rank in honor and usefulness.

We speak only for ourselves when we say that to-day the model road horse in all the essentials that determine precedence, it not only the peer of all horses, but he is king. So far as the term thoroughbred indicates superior endurance, it is a misnomer, judged by the record of performances.

In simple beauty lines there is no comparison in the mind of one unprejudiced, and in the matter of usefulness in the service of mankind, the difference in favor of the road horse is most absurdly striking. That the thoroughbred has been a potential factor in the production of the modern ideal road horse must be admitted, but the time has arrived when we need him no longer in this distinction, and he must take his proper place on the race-course where he can count his admirers by the tens of thousands, and where, as the fleet runner, he is the world's champion. Among the successful breeders and friend of the thoroughbred, Theodore Winters' name should be placed in the front rank. With his large executive and business faculties, Mr. Winters would be a marked man anywhere and among any people, for he is one of the men who create success by controlling its conditions, and he brought into the breeding of thoroughbreds all of his quiet enthusiasm and great force, and it goes without saying that he has achieved success, as such a man must in any direction. He knew what he wanted, and had ample means to back his judgment, two very important things, and when he looked around for some exceptionally good animal to place at the head of his harem of thoroughbred mares, he selected the great "Norfolk," the champion four-year-old of this day.

Thinking as we do, it has always been a matter of regret with us that Mr. Winters was not as great a lover of the trotter as he is of the runner, for had he been, in our judgment, this State would have been the gainer in every way. Without attempting or designing to go into the details of his breeding farm, suffice it to state, in general terms, that he has been, and is now, one of the notable breeders of thoroughbreds, is a man, on whichever side you take him, and although training and running his own horses, has never yet been even suspected of anything like jobbing or even questionable practices. May his numbers increase.

E. J. Baldwin is one of the coming breeders of the strictly thoroughbreds, although he dabbles a little in trotters, but is not an enthusiast in that direction. He owns a magnificent domain in the southern portion of the State, and having retired from the hotel business, will devote his entire attention, from this out, to the laying broad the foundations of collossal breeding and training stables. He has in his stud nothing but the choicest strains of blood that has won renown on many a hotly contested field, and he will bring to his aid his great business sagacity, a large experience, and indomitable pluck and energy that knows no defeat, and with these conditions, success is certain. We wish him well.

Governor Stanford is also entering the lists as a breeder of thoroughbreds, and has already shown the turf here a touch of his quality in such animals as Satanella, Fortress, Precious, and Forest King, and with Walsh as his able coadjutor, and princely means at command, he will step to the front as one of the foremost breeders of the United States. He has in his magnificent stud many animals worth almost a king's ransom, the representatives of strains that won success over all competitors.

Runners are not the poor man's horses, and if we would enjoy the rivalry of race horses it is fortunate when men like Stanford, Winters, and Baldwin became enthusiasts in the production of this luxury of the turf. And then with Pritchard, Boots, Stemler, and Ayres, and climatic conditions most favorable to the highest development of the thoroughbred, we may confidently look forward, in California, to a brilliant and distinguished renown as the home of the highest type of the race horse. And our trotting interests are in good hands, and we are on the high road to success, as a State, in the production of high bred trotters and road horses.

We are extremely fortunate in the possession of several large breeding farms that are based on system, and that are governed in the methods pursued by the philosophy of breeding. The time was not very far back when all trotters were looked upon as lucky accidents, and anything like an attempt to produce great speed at the trot, by a system of breeding, was laughed to scorn by would-be horse sharps.

But it has been found that the primary principle of breeding that "like produces like, or the likeness of some ancestor," applied here as elsewhere, and that nature was no respecter of persons or things, and that her laws were invariable.

It came to be realized that if men wanted trotters they must breed into families distinguished for this gait, and the more generations of trotters in the family the more uniform the type, and the greater the certainty of success.

Such breeders as Buckman of New York, Alexander and Withers of Kentucky, and others, demonstrated that the maxim was just as true, when properly applied here, as among runners, and, with rare patience and foresight, proved another theory, that the percentage of success in the intelligent breeding of trotters was greater than in the breeding of successful thoroughbred runners.

In our own State such intelligent breeders as L. J. Rose, Titus, Corbitt, P. A. Finigan, McDonald, Henry Seales, M. Salisbury, A. C. Dietz, and last and greatest of all, Leland Stanford, "caught on," and began the rearing of trotters in conformity to the maxim, and have won a very remarkable success. L. J. Rose started at Sunny Slope with the Clay blood, and with The Moor, mated with mares deep in the Pilot and Mambrino Chief blood; produced phenomenal trotters, with a certainty and uniformity that was almost startling. There never has been a more wonderful success, from the same members, in the history of breeding. And now with Sultan, the son of The Moor, and the sire of Eva and Sweetheart, with ample means and great intelligence, Mr. Rose is ambitious of still greater laurels, and always confronted Palo Alto to stimulate him to greater endeavors in a generous but hot rivalry; we may look for Sunny Slope to become a familiar household word, wherever the American trotter is loved and honored.

The history of Palo Alto has been so often rehearsed, that it would seem a waste of time to repeat it here. Its fame is already worldwide, as its merits deserve, and Governor Stanford, its founder, shows his greatness here as well as in spanning continents with railroads. But few know how profound a student he is in this department, and with what patience and discrimination he has laid his foundations in the different strains of blood. He never took a step without a reason, and his success is in no sense an accident, except in this sense that in the propagation of all animal life there are mysterious and occult influences many times at work that no human mind can control.

He is now trying some experiments that we do not believe will prove satisfactory, but it must always be remembered that they are experiments, and that he is amply able to indulge in them, and his successes or failures will in any event add to the world's knowledge.

This department is already growing too long, and we must dismiss it with the general remark that the outlook for the breeding interest on this coast is most hopeful.

We are producing all classes of horses equal to the demand, and a trade is springing up in the Islands and Australia that will stimulate us to greater and more careful endeavors to meet the call.

It may be of interest to know that we have in this State, as appears by the United States census returns of 1880, two hundred and eighty-one thousand nine hundred and ninety horses, of the estimated value of twelve million six hundred and ninety-eight thousand and ten dollars. This is an average valuation of forty-five dollars and three cents per head.

This is a small average valuation, but is made so by the considerable numbers of native horses, and as they decrease and our standard is raised, the average will increase until it is on a par with Kentucky at least, whose horses are returned at an average valuation of fifty-three dollars and eight cents per head, while those of New Jersey are put at ninety-five dollars and sixty-seven cents, and those of Rhode Island at ninety-four dollars and fifty cents, showing that these small States cannot afford to feed anything but the best and most useful.

It will be well for us in this State if we pursue those methods which will raise the standard of all our breeds until we take first rank over all.

CATTLE.

In reviewing the cattle interest, it is not our purpose to write from the standpoint of the mere statistician—speaking in the language of numerals and abstract figures, giving the rates of increase and decrease, and the rank we hold as a State in the production of beef, hides, and tallow, but to glance at the methods that have been pursued, and draw some lessons therefrom. Here, as in the matter of horses, the changes in the character of our cattle have been rapid and radical.

We can well remember the time when immense herds of semi-wild cattle, of the long-legged, gaunt, and long-horned Texas cattle roamed the plains of the Sacramento and San Joaquin Valleys in almost countless numbers, and when it was extremely dangerous for one to be caught out among them, except mounted on horseback, for these cattle were oftentimes savage even to ferocity. A man on a horse might ride through them with impunity, attracting no particular attention; but let a pedestrian appear, and presto! there was instant commotion; every head was lifted and shaken angrily; from every direction the scattering bands would come, and in a twinkling the unfortunate traveler would be confronted, and often surrounded, with a perfect *chevaux-de-frise* of startlingly dangerous-looking horns, every one of which could impale a man like a spike. Woe betide the man who lost his presence of mind and started to run, for his fate was sealed. His only chance of escape was to boldly face the angry animals and walk right into their faces, and make such demonstrations as would astonish and bewilder them, and finally cause them to break into wild stampede of terror, although this ruse did not always succeed.

Scattering bands of these primitive cattle are still occasionally met with in comparatively remote and unsettled localities, but like the mustang, they are becoming only a memory, and among undesirable animals of the past.

With the coming of the great immigration, and the consequent devotion of thousands of acres of pasture lands to the uses and necessities of a commercial age, and a higher civilization, and a few years of drought and famine for all unhoused and unstalled beasts, the primitive type began its death march, to give place to a better order of things, and more desirable animals.

The time has happily passed when the live stock interest was the dominant one here, and the great cattle kings practically controlled all legislation that affected our landed interests. Then if a poor but industrious farmer wanted to raise bread for his starving family, his benevolent Uncle Sam would see to it that he had the proper amount of land (after the speculators were satisfied), but he must fence out marauding bands of cattle, at an expense greatly exceeding the first value of the land. We are beginning now, although slowly, to see a better way, and once more in harmony with the highest development of the greatest resources of a State, and that is to oblige the man who would raise cattle to fence them in, either with stationary inclosures or a living wall of *vaqueros*. And we speak in no enmity to the stock and cattle men, but for what we conceive to be the greatest good of our coast, when we express the hope that the vast tracts of land now owned by private individuals and devoted exclusively, may be broken up into fragments and settled upon by thousands of families, who will help till the soil to bread the world.

But we must not allow ourselves to be led off into this fertile field of discussion. We are intent mainly on the present characteristics of our cattle and the condition of the breeding interests.

At a comparatively early period, importations were made of the different improved breeders, but in almost every case at a loss to the enterprising individual importer. And the reason for this loss and disappointment lies on the surface, for in almost every case the importations were purely speculative.

What we mean is, that men did not import fine short-horn bulls, or their kinds, in order to grade up an inferior herd to a higher standard, and content to wait patiently the slow and sure development of years for the reward, but hearing of the European and Eastern demand for such animals, and the high prices obtained, they sought to take advantage of this factitious and inflated market, and paid extravagant figures in order to sell again, as they would stocks on California Street, and found out too late that our market was too limited, and all the conditions were unfavorable.

And this is just as good a place as any to say that one great curse of this country has been fancy and dilettante farming, resulting in innumerable failures of greater or less magnitude, and the disgust of the unfortunate experimenters who retired sullen and desperate to shout the warning forever after, that "farming don't pay."

Thousands in California have taken up farming on the same principle that many families educated their sons—if after they got all around, and found one that was not good for anything else, they made a minister out of him—and so when a man failed in everything else, he thought, perhaps, after the man's coon dog, that he must be a good farmer, and forthwith started in to speculate in farming. In many cases, he and his family had become used to habits of extravagance and luxury, and took them all on the farm with him, where they necessarily blossomed into crushing burdens of debt—and failure. He had no experience, had never been trained in the routine and homely duties of farm life; knew absolutely nothing of the relation of crops to soil; but, of course, anybody could farm it, just as many a poor devil of a scribbler thinks he could run a newspaper, and went at it with true California vim and enthusiasm. Ten to one it was just this kind of a farmer that bought one of these fancy and high-priced bulls, and perhaps a thoroughbred stock horse, and to a dead certainty some very high-priced fancy fowls. His parlors had a piano, and brussels carpets, and all other pleasant surroundings so grateful to a cultivated mind. We make no objections to these things when they are a natural outgrowth of success, and nowhere else do they satisfy our sense of fitness so much as in the home of a successful farmer, who appreciates them at their full value, and has fairly earned the right to enjoy them. This is another thing. This amateur farmer began at the wrong end, and tried to boil his pot from the top, and after a few brief years full of perplexing care, he came out of the struggle like the parrot from his rollick with the monkey, and, like him, generally looked as if he, too, had "had a h—l of a time."

Or, again, some merchant hears that so-and-so made fifty thousand dollars last year on a wheat crop, and forthwith he gathers up the wreck of a broken fortune and makes a venture in San Joaquin Valley, putting several thousand acres in wheat. Along comes a dry year, or wheat is so low the next year that the crop is harvested at a loss, and away he goes, making another victim to speculative farming.

Farming always pays, taking one year with another, even in California, when conducted by farmers bred to the business and to the manor born, and having a technical knowledge and necessary experience; the more brains mixed with the soil the greater the success. But all this general talk is rather by way of parenthesis, although in the line of thought we were pursuing about the speculative importations of fine cattle. As we may touch this thought a little further along, we leave it here for the present.

There is another reason, to our minds, why fine bred herds, and even milk cattle, have not paid better in this State.

We intimated in another portion of this article that the conditions surrounding stock raising, up to the present time, have not been favorable. We will now more fully explain what we mean by this. And in order to get at this a little better, let us look at the conditions that made these improved breeds a very decided success. The breed of Short-horn cattle originated in England with Collins, as every breeder knows, and the end sought was to produce an animal to stall feed that should make a pound of good beef at the least cost. Perhaps this is clumsily stated, but it will answer. In England there is comparatively little grazing land, and domestic animals must be fed by hand when fattened for market, and when everything must be figured closely if even a small margin of profit is to be made; and to the farmer there the kind of animal to feed became of the very first importance. It will be seen at once that all the conditions in that country are most favorable to an animal like the improved Short-horn, that takes kindly to stall feeding, matures early, fattens quickly, and converts the raw material into beef at a minimum cost. The same is true of the great milking families. Take, for example, the cattle of the Channel Islands. Even to a greater extent must the inhabitants study economy, and count minutely the cost of the production of a quart of milk or a pound of butter; and they bred an animal that would take a pound of raw material and convert it into the most milk or butter at the least cost to the owner.

And the Jersey cow was begotten of these conditions, and whereever the same conditions govern, the Jersey cow will be the favorite, and be most highly appreciated. Now, in order to get the idea more plainly, contrast the named conditions with those of California, at the time of the first importations, or even those of the present. It was almost idle to talk to one who counted his cattle by the thousands, and measured his land by leagues, about the use of fine Short-horn bulls, to grade up his herd to mature earlier, fatten more quickly, give beef of finer quality, and more of it. The time hadn't come for any such fine-spun calculations. Demonstrate to him the absolute certainty of these results, and he would admit it all and still be indifferent—for the facts made no impression on his mind. What cared he about a few pounds of beef, more or less, for the cost was all the same to him, whether his herd was two thousand or five thousand, except a few more vaqueros to herd them. And as to all those niceties about the quality of the beef that cut so much figure in an old and discriminating market, he cared still less, for the ordinary

California butcher would make but little account of it, when buying a few hundred or a few thousand fat steers. As population increases, and the great grazing plains are settled upon, and men are forced to begin to count the actual cost of producing a pound of beef, and consumers get finical about the quality of beef they eat, then will the improved breeds demand the attention their real merits deserve, and not until then. Everything denotes that this time is not far distant, and when the owners of fine herds of improved cattle will find their profit in them.

And there is still another reason why these fine animals, with long pedigrees, have not been a greater success with us, and that is that it became the rage to speculate in pedigrees, irrespective of the animal appended to it. And just this thing bankrupted a majority of the great breeders in the United States, and brought their herds to the auction block. The originators of the breed, bred for a definite end, which has already been stated, and that end was practical use.

The best Short-horn, even the purest Duke, represented to the scientific breeder only so much beef, worth so much per pound on the butcher's block. But they finally drifted into the hands of speculators, who sought to make them fashionably ornamental, and hung their high sounding pedigrees, bound in blue and gilt, or framed in gold, upon the walls of their drawing rooms. The breed was divided and subdivided into numerous families, each with its blind partisans, to the utter confounding of individual merit; until the natural culmination of folly was reached, when men paid the most extravagant prices for a mere pedigree, in order to sell it at an advanced price to some bigger fool. In vain sober men, not bitten of this madness, and seeing how the whole thing must end, raised the warning cry, begging breeders to listen to reason; but in vain, and the reaction came at last, in absolute ruin and bankruptcy. Not many years ago, a prominent dilettante breeder, who had paid long figures for pedigrees, showed us, with a great deal of pride, a Short-horn bull that he said good judges had told him resembled a pure Duke. We looked at his anvil horns, flat ribs, and defective quarters, and mentally said: "God help the pure Dukes!"

There are two or three intelligent breeders in this State, whom we could name, who have been wiser, and are now reaping their reward in steady sales, that will surely grow in the near future. They have been particular, it is true, about the purity of their animals, as a breeder ought to be, but they have always bred with the view to the highest individual excellence, whether the pedigree of the animal jumped with the fashionable caprice of the hour or not. They have seemed to realize that the ultimate end of the purest bred Short-horn was the butcher block, the meat retailing at so much per pound, or the dairy, with the milk peddled at so much per quart. It is possible now to get an animal of rare individual merit, with a good pedigree, at a very reasonable figure; and general stockmen are becoming aware of the fact, and the demand is steadily growing. And it will not be impertinent, I trust, to urge the breeders of certain milking strains not to fall into the same pitfalls which the Short-horn men dug for their own feet. We have been watching these Jersey breeders for some time, and think we detect a tendency in this same direction—that is, a tendency to magnify fancy points at the expense of the more solid and really essential qualities. These fancy breeders are beginning to exalt color, the crook of horn, escutcheon, color of the nose, etc., above the ability to produce milk and butter. It may be desirable and proper to improve the size of the Jersey cow and her symmetry, so long as these things can be done without injuring the qualities that have made her standing and given her a world-wide reputation, but no further. Let this be considered the bottom fact, that the Jersey, or Guernsey, or Holderness, or Holstein cow must ultimately be gauged, by the general producer, by the interest she will return on the capital invested in her, and for all practical purposes she is worth no more.

We have in this State several intelligent and careful breeders of fine cattle, and their labors are beginning to tell for good. Among these may be mentioned the more prominent, such as Robert Ashburner, of Baden; Coleman Younger, of San José; Moses Wick, of Oroville; Page Bros., of Sonoma; Sturgis, of Centreville, Alameda County, all breeders of Short-horn cattle. At the head of the Jersey breeders we think Henry Pierce, of San Francisco, must be placed, as his herd is spoken of as a very notable one, and he is constantly adding to it regardless of cost. Robert Beck, of Sacramento, is also a prominent breeder, and has a fine herd; also R. P. Clement and Mastic, of Alameda, have very fine animals of this breed, as has also A. K. P. Harmon, A. C. Dietz, and Derby in the same county, with a great many fine animals owned by gentlemen for their own gratification. Taken altogether, we have a most creditable showing of Jersey cattle, and must soon take good rank as producers of one of the very finest milking strains the world has yet produced.

With these rapid generalizations we must dismiss the cattle interests until such times as we can deal in greater detail and with individuals. The last census returns gives the number of cattle in California as nine hundred and ninety-nine thousand nine hundred, with an average value per head of twenty dollars and thirty-five cents, making a grand total valuation of twenty million three hundred and forty-seven thousand nine hundred and sixty-five dollars, giving us sixth rank as a cattle producing State.

SHEEP.

This humble wool-bearing animal is another illustration of how often men, otherwise discerning and critical, mistake the real elements of power, and political and economic development, and give preference and honors to things of little worth in comparison with others. A timid and fleeing sheep does not strike the imagination nor appeal to the sentiment of the heroic that lives in the breasts of all men, and consequently, in their minds takes inferior rank to that something of strength and apparent grandeur that appeals to both.

We must confess that the lost sheep bleating with frightened appeal on the mountain side, seems to cut but a sorry figure beside Job's war-horse, whose neck is clothed with thunder and who rejoices in the echoing clamors of the battle field, but for all this Job's famous war-horse, who has been the feature of so much sentiment and poetry and rhetoric, is but an insignificant thing when compared with this timid animal that forever stands in the minds of men as the fitting type of the peaceful and non-resistant. We do not care to preach, or to moralize overmuch, but isn't it a singular thing that men and women are so prone to apotheosize mere brute strength? Tell a man that he looks like a sheep, and he will take it as the very highest insult and resent it accordingly. Tell him that he looks like a lion, and forthwith he begins to swell with pride and conceit, and numbers you among his appreciative friends. We have grave doubts as to whether the meekest looking deacon that ever passed a plate would take it as a compliment if he were told that he looked either sheepish or lamb-like, and we have no doubt in the world about his approval if told he looked every inch a hero of strength and muscle. The fact is that we outgrow our savagery, and grow in peace, and meekness, and humility, and worshipful of the gentler forces of civilization and christianity very slowly. We do not quarrel with this tendency of human nature, for we are not of the number who think a nation of peaceful shepherds at all desirable to meet the rugged forces that bar the world's onward march, and trust the day is far distant when sheep or lamb on the highest pedestal will concrete a nation's thought and ambition.

But leaving this, let us look for a moment how important the sheep is as a commercial factor. The importance of wool as a source of natural wealth is shown by its effect on the increase of population and wealth where sheep is most raised. Roufaix, France, rose from a population of five thousand souls and a manufactory of three thousand pieces to fifty-five thousand people and four hundred thousand pieces. Rheims began, in 1801, the manufacture of merino, and in 1863 had fifty-five thousand workmen running one hundred and seventy thousand spindles and nineteen thousand hand-looms, annually producing eighty millions francs worth of cloth. Bedarieux, from a small village has grown to be a great city, and sends out annually two hundred and fifty thousand pieces of cap cloth. Elbeuf also, once a small hamlet, now has twenty-four thousand workmen employed. Verviers, Belgium, from five thousand people has grown to forty thousand by the manufacture of cloth. In one season she sent out seventy millions francs worth. West Riding, of Yorkshire, England, from fifty-nine thousand souls has increased to one million three hundred and seventy-five thousand; Halifax, from sixty-three thousand to one hundred and thirty thousand; Huddersfield, from fourteen thousand to thirty-eight thousand; Leeds, from fifty-three thousand to one hundred and fifty-two thousand; Bradford, from fourteen thousand to one hundred thousand. It is in Bradford that the great worsted works are located. So true it is that

> "Not guarded Colchis gave admiring Greece
> So rich a treasure in its Golden Fleece."

Wool gives the principal prosperity to Australia, and she now has cities larger than New Orleans, with a trade greater than Boston, Baltimore, Pittsburg, Cleveland, Buffalo, or Detroit. Melbourne, ten or fifteen years ago, had a population of one hundred and seventy thousand souls, and Sydney was as important. In one year Australia exported thirty million pounds sterling worth of wool, or about one hundred and fifty million dollars in gold, and for ten years past her trade has been steadily increasing.

To see how great a figure sheep and wool cut in the world's commerce look at the following figures: Great Britain has a yearly production of two hundred and sixty million pounds of wool; Germany, two hundred millions; France, one hundred and twenty-two millions; Spain, Italy, and Portugal, one hundred and nineteen millions;

European Russia, one hundred and twenty-five millions; United States, one hundred millions; North American provinces, ten millions; Asia, four hundred and seventy millions; North Africa, forty-six millions. The annual yield of the world is one billion seven hundred and six million pounds.

From these figures we begin to get some glimmer of the possibilities of sheep and wool.

It only remains to look at what we are doing in California. In a general way the outlook is most promising and encouraging. Instead of being dependent upon an Eastern market, manufactories are springing up in this State and Oregon, consuming our own wool and manufacturing woolens but little, if any, inferior to the best imported. In the matter of blankets we are excelled by none.

The Pacific Coast has within her borders thousands of acres of land that must be given over to sheep pasture and the production of wool, and these lands, now looked upon as waste, may by intelligent sheep husbandry be made most profitable. It needs only that the same economy of production shall govern in this business as in other business enterprises. In the number of sheep we occupy first rank, having seven millions four hundred and ninety-three thousand eight hundred and sixty-three, with an average valuation of one dollar and seventy cents per head, making a total of twelve millions seven hundred and thirty-nine thousand five hundred and sixty-nine dollars. This is no mean industry, we submit.

We do not at this time desire to enter into the comparative merits of the different breeds of sheep, whether for mutton or wool. These things cannot be arbitrarily decided, and the kind to be most profitably raised must be decided often by the local demand. But we do desire to call a most marked attention to the importance and great desirability of grading-up our flocks by the use of thoroughbred animals, which can now be obtained in this State of reputable breeds at reasonable prices. If you are raising wool it will make a vast amount of difference as to whether you shear four pounds or twelve pounds per annum to the animal. To any one not conversant with the use of the best merino rams in increasing the weight of the annual clip, the figures would be improving. We are very glad to know and to be enabled to record that we now have as well bred sheep as any to be found in the world. This particularly applies to the fine wool varieties—the Spanish and French merinos.

CALIFORNIA.

Government lands suitable for general farming, fruits, and vineyards, open to new settlers under the homestead and preëmption laws. Title to the Government lands can be acquired under the homestead law free of cost, save a small fee of twenty-two dollars, and actual settlement. Finest climate in the world. Beauty and grandeur of scenery and fertility of soil unsurpassed. Information for settlers. Specific information sent free on application. Immigration Association of California, No. 10 California Street, San Francisco. This Association is supported by and is under the control of the business men of San Francisco. It is organized for the purpose of furnishing free information concerning California, and to assist immigrants in finding employment and permanent homes in the State. All possible care will be taken to have the information given by the Association clear and reliable.

OFFICERS OF THE ASSOCIATION.

President, Arthur R. Briggs; Vice-President, W. L. Merry; Treasurer, Wm. Steinhart; Secretary, A. W. Preston; Land Officer, C. H. Street.

BOARD OF DIRECTORS.

James R. Kelly, Wm. L. Merry, James Duffy, Wm. Blanding, W. Steinhart, T. L. Barker, J. V. Webster, Arthur R. Briggs, W. N. Hawley.

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GEOGRAPHY.

It has been truly said that "California has a peculiar topography. No other State comprises within so small a space such various, so many, and such strongly marked natural divisions, isolated volcanic peaks, vast domes of granite, steep and rugged mountain ridges, fertile and beautiful valleys, bare deserts, spacious bays, magnificent rivers, unparalleled waterfalls, picturesque lakes, extensive marshes, broad prairies, and dense forests—all these are hers." The State extends in a northwesterly and southeasterly course about seven hundred and fifty miles, with an average breadth north of Monterey of two hundred miles, and south of that point of three hundred miles, and comprises within its limits an area of about one hundred and fifty-five thousand square miles, or ninety-nine million acres, and is the second largest in the Union.

POPULATION.

It has a population of only eight hundred and fifty thousand, much scattered, yet the total annual production of the mines, farms, and manufactories amounts to over one hundred and fifty million dollars. The people have nearly one hundred and fifty million dollars in the savings and other banks, and are generally enterprising and prosperous.

TOPOGRAPHY.

There are two great mountain ranges running northwest and southeast, namely: the Sierra Nevada and the Coast Range. The former is from five to eight thousand feet high, and the latter from two to six thousand feet. The two ranges are connected in the southern part of the State at Tehachapi and again at Mount San Bernardino. The Sierra Nevada extends along the eastern border of the State, and the Coast Range along the coast to the north and south boundaries of the State. The Sierra Nevada is about four hundred and fifty miles long and connects with the Coast Range again by a latitudinal range running across the northern portion of the State. The base of the Sierra Nevada Range north of Fresno has an average width of about eighty miles. The Coast Range averages about sixty-five miles in width.

Between the two ranges are the great Sacramento and San Joaquin Valleys, which are about four hundred and fifty miles long by fifty-five miles wide, and may be termed the heart of the State.

In the northern part of the State and north of the junction of the two great mountain ranges is the Klamath Basin, through which runs the Klamath River in a southwesterly course, between steep hills and mountains and rocky cañons, for a distance of about two hundred and twenty-five miles to the ocean.

The whole basin of the Klamath is very rugged for a distance of forty miles from the coast, and along the main river there is very little valley or bottom land. However, near the lakes are large bodies. Pine, cedar, and fir forests cover the mountains, and there are other valuable trees both on the mountains and in the valleys.

In the extreme southeastern portion of the State is the Colorado Desert, which is about one hundred and forty miles long by seventy miles wide.

Another great basin, called the Mojave Basin, extends into the middle eastern border of the State, the surface of which is cut up by the many irregular ridges of barren rocky mountains.

There are many rivers. In the central portion are the Sacramento and San Joaquin, each about three hundred and fifty miles long in their meanderings, which are the only navigable streams in the State. There flow from the Sierra Range westward into the Sacramento, the Pit, Feather, Yuba, American, Cosumnes, and Mokelumne

Rivers. Into the San Joaquin, the Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno. Into Tulare Lake, the Kings, Tule, and White Rivers, and into Kern Lake, the Kern River. All of these are considerable streams, with an average length of about one hundred and twenty miles. The upper half of each is in the steep and rugged mountains, where they are torrents. After reaching the plain their currents are gentle and the banks low, fringed with oak, sycamore, cottonwood, and willow.

The rivers of the Coast Range flowing westward into the ocean, south of San Francisco, are the San Lorenzo, Pajaro, Salinas, Cuyama, Santa Inez, Santa Maria, San Buenaventura, Santa Clara, Los Angeles, San Gabriel, Santa Ana, Santa Margarita, San Luis Rey, and San Diego, many of which are constant streams to within ten or fifteen miles of their mouths, and all of them passing through rich valleys. North of San Francisco the main streams of the Coast Range which empty into the ocean are the Russian, Eel, Elk, Mad, Klamath, and Smith Rivers, besides many others of less importance, all of which are permanent streams, bordered with narrow valleys at the foot of the mountains.

To all the rivers of the State there are many tributaries, along which are good agricultural lands.

The Coast Range is composed of a multitude of ridges, and is intersected by numerous long, fertile, and narrow valleys, such as the Los Angeles, Salinas, Santa Clara, Sonoma, Napa, and Russian Rivers. These are among the most fertile valleys in the State.

The Sonoma, Napa, and Los Angeles Valleys are particularly noted for the production of grapes and wines.

There are many important lakes—the Tulare, Owens, Kern, Clear, Klamath, Goose, Fall, Honey, Elizabeth, Tahoe, Mono, and Dry Lakes. There are also many smaller ones.

Along the coast of nine hundred miles there are numerous good harbors, the most important of which are those of San Francisco, Wilmington, and San Diego. The former is one of the finest land-locked harbors in the world, and the latter is not excelled by many.

THE FOOTHILLS.

The western base of the Sierra Nevada mountains, for a width of about twenty miles, and bordering the Sacramento and San Joaquin Valleys, is known as the foothill region, and is included in the estimate heretofore given as the width of the Sierra range. The "foothills" extend from the northern to the southern extremity of these valleys. The temperature, up to a height of about one thousand five hundred feet, is similar to places in the same latitude in the valley.

In the central region of the valley, the hills receive for each one hundred feet of ascent from one half to three fourths of an inch of rainfall more, annually, than in the same latitude in the bottoms.

Throughout the whole of this region living springs are numerous. Every agricultural product that can be grown in the valleys may be produced with facility in these foothills. Ordinarily the land has to be cleared of trees. Fruit trees and vines thrive better than in the valleys. Wood is everywhere to be found.

There are more than three million acres of these lands open to settlement under the homestead and preëmption laws.

CLIMATE.

One of the chief advantages of California is its admirable climate. It is much varied, differing greatly in different localities. In many counties fifteen to thirty miles travel takes one from the region of oranges to where only the hardy fruits thrive.

In the valleys the Winters are mild. In Summer the nights are cool, and cloudy days are few. Violent wind storms, thunder, lightning, hail, snow, and ice are very rare, and occur only in the mountains.

On the foothills of the Sierra, after a height of about one thousand five hundred feet is reached, also northward, in the Coast Range, the climate as we ascend approaches more and more that of the north Atlantic States.

At San Francisco ice is rarely seen, and the thermometer never stays at freezing point twenty-four hours. Snow has not been seen, except a few flakes, for twenty-five years.

In the Sacramento and San Joaquin Valleys the Winters are about four degrees colder, and the mean temperature in the Summer is from sixteen to twenty degrees warmer than that at corresponding latitudes on the coast. The weather at midday is very warm during the dry season. In the southern part of the State the Winters are milder and Summers warmer. A temperature of one hundred degrees in the southern and interior part of California, owing to the dry atmosphere, is more endurable than eighty degrees in the States east of the Rocky Mountains. Sunstroke is unknown.

The following table gives the results of observations at various points on the Southern Pacific Railroad, as compared with some of the world's noted climates:

MEAN TEMPERATURE.

PLACE.	January—Degree.	July—Degree.	Difference—Degree.	Lat.—Deg. and Min.
Austin, Texas	36	84	48	30.26
Borden, California	42	89	47	36.00
Cincinnati, Ohio	21	77	56	39.06
Chicago, Illinois	10	63	53	41.00
City of Mexico	52	63	11	19.26
Caliente, California	46	92	46	35.00
Delano, California	47	86	39	35.00
Dijon, France	33	70	37	47.00
Fort Yuma, Arizona	56	92	36	32.43
Genoa, Italy	46	77	31	44.24
Gilroy, California	41	78	37	37.00
Goshen, California	51	91	40	36.00
Honolulu, Sandwich Islands	71	78	7	21.16
Hollister, California	48	73	25	36.00
Jacksonville, Florida	58	80	22	30.50
Los Angeles, California	55	67	12	34.04
Monterey, California	52	58	6	36.36
Milan, Italy	33	74	41	45.00
New York	31	77	46	40.37
New Orleans, Louisiana	55	82	27	29.57
Naples, Italy	46	76	30	40.52
Nice, France	47	75	28	43.00
Pajaro, California	49	58	9	36.00
Richmond, Virginia	73	77	44	37.00
San Francisco, California	48	58	10	36.36
Santa Barbara, California	56	66	10	34.24
San Diego, California	57	65	8	32.41
Sacramento, California	45	73	28	38.34
Stockton, California	49	72	23	37.56
San Mateo, California	46	59	13	37.00
San José, California	46	69	23	37.00
Salinas, California	47	65	18	36.00
Soledad, California	43	70	27	36.00
Savannah, Georgia	39	82	43	32.00
St. Augustine, Florida	59	77	18	30.05
Vallejo, California	48	67	19	38.05

The climate in the extreme northern part of the State is cold in Winter and warm in Summer, and is similar to that of the Eastern States.

The temperature of the coast is generally mild and pleasant in Summer, but north of Santa Barbara is subject to chilly northwest winds. The coast counties are subject to regular trade-winds and fogs for a distance of from six to ten miles inland. The fog at times is thick and wet, and is little less than a fine drizzly rain, beneficial to crops of nearly all kinds. These usually disappear about ten o'clock in the morning.

SEASONS.

The year is divided into two seasons—the wet and the dry. The wet season generally begins about the middle of November, sometimes a little earlier or later, and continues until April or May.

There is occasionally a light shower in June or July. Between harvest and thrashing time there is little danger of rain. Grain is often left lying in sacks upon the field for months, or until sold.

The wet season is much the pleasanter time of the year. It is called the rainy season, not because the rain falls continuously, but because it does not fall at any other time.

Plowing and seeding commence with the first heavy rains.

The average rainfall of the State is less than that of Liverpool and Rome, or of Chicago and St. Louis, and about the same as at Paris. In some localities, however, in the northern part of the State, it is greater than in any of the places named.

The following table gives the average yearly rainfall by localities:

City or Town.	County.	Inches.
Crescent City	Del Norte	34
Humboldt Bay	Humboldt	32
San Francisco	San Francisco	23
Monterey	Monterey	15
Santa Barbara	Santa Barbara	14
Los Angeles	Los Angeles	12
San Diego	San Diego	10
Bakersfield	Kern	5
Fresno	Fresno	7½
Sacramento	Sacramento	19
Redding	Shasta	30
San José	Santa Clara	15

While it is raining in the valleys the snow is usually falling in the mountains. It is probable that as much snow falls on the mountains in the eastern and northern parts of the State as in any part of the United States. From the north part of Sonoma, Napa, and Solano Counties northward, light snow falls on the low lands every Winter.

IRRIGATION.

If the rainfall is less than ten inches during any season, irrigation is necessary. Although there are few localities in the State where the average rainfall for a long series of years does not exceed ten inches, yet, in nearly all the counties south of Sacramento and San Francisco, there are often years when it is less. In the San Joaquin Valley, and further south in the State, irrigation is general. It is always beneficial, and when provided adds much to the value of the land, and causes it to produce astonishing crops.

Artesian water, which is found at various depths in the valleys, varying from fifty to three hundred and fifty feet, is largely used for irrigation purposes. Ordinary wells are sunk to a depth of from ten to fifty feet, almost anywhere in the State, and abundant water is found.

HEALTHFULNESS.

The climate of California is generally considered conducive to health. The hills and mountains and their valleys are considered very healthy. In the low lands, where overflowed, there are at certain seasons some miasmatic diseases. But there are no diseases peculiar to California alone.

Portions of the State have long been visited as health resorts, particularly in the Winter seasons.

Among the many places most noted as health and pleasure resorts, may be mentioned Los Angeles, San Diego, San Bernardino, Santa Barbara, Monterey, Santa Cruz, Napa, San Rafael, Santa Rosa, and St. Helena. In the mountains, in different parts of the State, are many valuable springs. These are much visited for pleasure and health.

TIMBER.

California produces many varieties of valuable trees which grow both on the mountains and in the valleys. The greatest portion of the Sierra Nevada mountains is covered with timber. The oak, manzanita, nut-pine, and other varieties, grow to an elevation of about two thousand five hundred feet above the sea, and dense forests of cone-bearing trees are found at an altitude of six thousand feet. The trees ranking first in size (known as the Big Trees) attain a height of three hundred to four hundred feet, with a diameter of thirty-five feet, but are not common in California forests. The redwood is the second tree in size in the State, and the first in commercial value. It is used for lumber, fencing, ties, and fuel, and for all kinds of rough and fancy building. It grows on the coast from one to thirty miles inland, and the forests extend from the north boundary of the State to the south boundary of Monterey County. The redwood tree is never found outside this State. The white oak grows to a considerable size, but it is of little value except for fuel. Laurel is one of the most beautiful trees of the coast, madrona the most striking. There are other valuable and beautiful trees in the State, such as the juniper, yew, walnut, cypress, poplar, willow, live oak, sycamore, buckeye, cottonwood, etc. The eucalyptus tree, or Australian gum, as it is sometimes called, when set out, grows in all the coast counties of the State most rapidly, and a grove of these in a few years becomes a forest. This wood is valuable for fuel.

SOIL.

The soil is much varied. In some of the valleys it is a loose, rich loam. In others it is an adobe, a heavy black clayey soil which produces excellent crops when once under cultivation. The soil on the hills and mountains is rich and mellow, and is very easily worked.

The prairies are not covered with sod, and the first plowing is nearly as easy as the subsequent ones. The severe task of breaking prairie is not known in this State. The soil of the timber lands is similar to that of the timber lands in the Western States.

PRODUCTIONS.

The agricultural productions of California are more varied than those of any other State in the Union. The soil produces, with equal facility in the peculiar climates which are found here, the vines of continental Europe, the hardier cereals of North America, and the luxuriant fruits and flowers of the semi-tropics.

California is noted the world over for the excellent quality and size of her fruits.

The blooming flowers in Winter is the admiration of visitors.

Wheat, barley, oats, rye, buckwheat, indian corn, broom corn, and hops are extensively raised in nearly all parts of the State. California is the third largest exporter of wheat of all the United States. The California wheat has a fine full berry, is light colored, and being very dry is particularly profitable for export. California barley is of exceptionally fine quality, and is highly prized by Eastern brewers. Hops also do well in this State, and are an important article of export. Fruits, honey, wool, and hides are exported in large quantities.

The State is also noted for its rich gold, silver, and quicksilver mines, and is well supplied with coal, iron, copper, stone, and marble.

Garden produce of all kinds is easily raised everywhere. Peas, beans, onions, potatoes, pumpkins, squashes, melons, tomatoes, beets, carrots, radishes, cabbages, celery, sweet potatoes, etc.

The apple, pear, quince, peach, plum, prune, cherry, apricot, nectarine, olive, and other fruits, and the English walnut, almond, chestnut, and peanut thrive exceedingly well.

Blackberries, strawberries, raspberries, gooseberries, currants, and other small fruits do well in very many parts of the State. The grape, both for wine and raisins, does exceptionally well, and raisins are competing successfully with the best brands of Malaga. France is also yielding the palm to California for the excellence of her wines.

The orange, lemon, lime, fig, pomegranate, etc., grow luxuriantly in the southern gardens and orchards. The fig does well as far north as Sacramento.

Tobacco and cotton are grown in the southern part of the State, and both promise to become important productions.

It has been demonstrated beyond question that California is well adapted to the raising of silk. Its equable climate, and the rapid growth of the mulberry tree, have proved in various parts of the State that the rearing of the silkworm will become an important branch of industry. It requires little or no capital, and can be carried on by the women and children of the family as an addition to other farm work. None of the diseases which have affected the worm in Europe have ever appeared in this State. Samples of the silk raised here have been sent to England, France, and Italy, and the manufacturers have expressed the opinion that it is equal to that produced in the most noted districts of Japan and Asia Minor.

Alfalfa often produces three and even four crops of hay in a single season, and is considered invaluable for stock.

The climate is so mild that all vegetable life in ordinary seasons is almost as active in January as in July. Trees and shrubs have nearly twice as much time to grow and mature as in the Atlantic States.

DOMESTIC ANIMALS.

Horses, mules, cattle, sheep, goats, and hogs are raised in every part of the State, and south of San Francisco can live without shelter and without cultivated food. Fine blooded stock of all kinds has been introduced, and many farms are devoted specially to raising blooded animals. There are blooded stock farms in California unsurpassed in the world. Nutritious grasses grow voluntarily in abundance in the valleys and on the foothills and mountains during the wet season, and retain their nutritious qualities when dried by the Summer sun; these make excellent feed for horses, cattle, sheep, and hogs during the dry season. The late Fall and early Winter in California is the feeding season for stock when feeding is necessary. Hay is generally obtained by mowing small grain, wheat, oats, rye, and barley before maturity.

MARKETS.

Good markets are to be found for all productions in the State. The mining districts furnish markets for farmers and fruit raisers situated within easy reach by wagon. Farming is generally profitable in this State, as elsewhere. Wheat, barley, and various other crops can usually be sold on the land where produced, to the agents of millmen and shippers, who traverse the country making purchases. Wheat is shipped to Europe by sailing vessels. Fruits, honey, wool, and hides are shipped to the Eastern States by the overland railroads. The Southern Pacific Railroad Company is transporting California wheat, flour, and other produce to New Orleans for Europe.

RAILROADS.

Although it is but thirty-five years since the discovery of gold in California, at which period the State was a vast wilderness, yet in that short time the progress of civilization has been rapid and permanent. Railroads have kept pace with the increase of population, and there are now twenty-three railroads in operation, including the main trunk lines and their branches, and many others are contemplated. Those in operation are the Central Pacific, main line; Central Pacific, Oregon division; Central Pacific, Western division; Central Pacific and Amador Branch Railroad; Southern Pacific, Northern division; Southern Pacific, Tulare, Los Angeles, Yuma, and Wilmington divisions; Los Angeles and Independence; California Northern; California, Pacific, and Northern Railway; Nevada County Narrow Gauge; North Pacific Coast; Northern Railway and Berkeley Branch; Northern Railway and San Pablo and Tulare Railroad; Sacramento and Placerville; San Francisco and North Pacific; San Luis Obispo and Santa Maria; Santa Cruz; South Pacific Coast; Stockton and Copperopolis; Vaca Valley, and Clear Lake.

The overland roads have direct communication with the commercial centers of the west (Chicago, St. Louis, and Cincinnati). The through traffic from the Atlantic seacoast to San Francisco is distributed between the different railroad companies, the Pacific Mail Steamship Company, and clipper lines. The railroads receive, however, the larger portion. The Southern Pacific Railroad, extending south of San Francisco, through California, Arizona, and Texas, and being continued to New Orleans, opens a new line to the Atlantic Ocean, which, in connection with steamer lines to Europe, will undoubtedly offer great advantages to immigrants.

CITIES, AND CENTERS OF COMMUNICATION.

There are many important towns and cities. San Francisco, on the bay of the same name, is the most important city, and the commercial metropolis of the Pacific Coast. It is the gateway of Oriental trade with the United States. It is to the Pacific Coast what New York City is to the Atlantic Coast. The population was two hundred and thirty-three thousand nine hundred and fifty-six when the United States census was taken in 1880. Oakland, on the opposite side of the same bay, had, at the same time, a population of thirty-four thousand five hundred and fifty-six. Sacramento, the capital of the State, is on the Sacramento River, and on the line of the Central Pacific Railroad, about one hundred and twenty miles northeasterly from San Francisco. The population in 1880 was twenty-one thousand four hundred and forty. San José, Los Angeles, and Stockton are the three next in size, each having a population exceeding ten thousand. Los Angeles is the metropolis of the southern part of the

State, and is situated in the heart of the orange region. There are eighteen towns which have each a population exceeding two thousand and less than ten thousand. There are nineteen with a population of over one thousand and less than two thousand. There are thirty-seven towns with a population of over five hundred and less than one thousand, besides a multitude of smaller villages.

SCHOOLS, CHURCHES, AND BENEVOLENT ASSOCIATIONS.

Our common schools are the pride of the State. Free education is provided, so that it is within the reach of all. Wherever fifteen children can be gathered to form a school, it is entitled to support at the public expense.

In the large towns are first-class high schools. There are also a number of academies, and colleges, some of them first-class institutions. There are also military, medical, and theological schools. San Francisco supports three commercial colleges. Besides these are the State Normal School and the University, both supported by the State.

The leading church denominations are well established.

In all the leading towns the principal benevolent associations have organizations.

LANDS.

Private lands vary in price from two dollars and fifty cents an acre for unimproved lands remote from towns, to ten dollars an acre near towns; and from ten dollars to one hundred dollars an acre for improved land, according to value of improvements, and proximity to large or small towns.

The Immigration Association is searching the United States Land Office records in California, to ascertain the exact location and quality of the millions of acres of vacant Government lands in the State, for the purpose of aiding immigrants to locate on them with the least possible expense and loss of time. There are Government lands in every county in the State, with two or three exceptions. The Association has found in different counties considerable tracts of Government land suitable for cultivation, which can be recommended for settlements.

Title to the Government lands may be acquired under the Homestead, Preëmption, Timber, and Timber Culture laws.

HOMESTEAD LAW.

The word homestead, as now applied in the United States, signifies a tract of land given away by the Government as a free gift forever, on the single condition that the person accepting the gift shall live upon the land and cultivate it, and make it his home for five years. Any citizen of the United States, who is the head of a family, or an unmarried person over the age of twenty-one years, is entitled to a homestead of one hundred and sixty acres. Persons of foreign birth may avail themselves of the benefit of this law by declaring their intention to become citizens; and this they can do immediately after their arrival in this country.

A person wishing to enter a homestead must go to the United States Land Office of the district, or to the Clerk of the county in which the land he wants is located, and file his application and affidavit in accordance with legal forms which will be furnished him by the Land Office. The Land Office fees are from sixteen dollars to twenty-two dollars, which must be paid at the time of filing the application. Within six months after filing his application at the Land Office the settler must commence living upon and improving the land, and thereafter, for five years, he must make the tract his actual home. A soldier who served not less than ninety days in the army during the late rebellion is required to live on the land five years, less the time he served in the army. At the expiration of five years, or within two years thereafter, on making proof at the Land Office by two competent witnesses, that he has complied with all the requirements of the law, and paying an additional fee of from six dollars to twelve dollars, he will receive from the Government a complete and absolute title to the land.

Homesteads, until the issuing of the patents, are *free from taxation*, and cannot be taken away or sold for debt, but are absolutely secure to the settler so long as he *occupies and cultivates the land.*

If, at any time after six months, the homestead settler should desire to get a full title to his land, he can do so by making proof of settlement and cultivation up to date, and paying the Government price of one dollar and twenty-five cents or two dollars and fifty cents per acre for the land, according to location—that is, within or without the boundary lines of railroad grants.

PRE-EMPTION LAW.

Any person qualified to take a homestead is also entitled to one hundred and sixty acres under the preëmption law (but not at the same time). Within ninety days after settlement on the land he must file his application in the District Land Office where the land is located, which will cost three dollars. At any time after six months' settlement and up to thirty months after filing his application, the settler may pay for the land at the rate of one dollar and twenty-five cents or two dollars and fifty cents an acre, according to location.

TIMBER CULTURE LAW.

Under the timber culture Act an applicant is entitled to one hundred and sixty acres on any section naturally devoid of timber; the whole section must be devoid of timber. On one section only one timber claim can be taken. It requires eight years to acquire a title. Actual residence is not required. The first year five acres must be broken. Second year must cultivate this five and break five more. Third year must plant the first five acres in trees and cultivate the second five acres. Fourth year plant the second five acres in trees, which make the ten acres. On the day of final proof six hundred and seventy-five trees must be living and in a thrifty condition on each acre.

CAPITAL NECESSARY FOR NEW COMERS.

The question arises as regards the smallest sum considered necessary for a new comer to start with. An industrious man may come here almost without a dollar, hire out for some years, and work his way up by strict economy. But those who come here to make homes for themselves should have five hundred dollars to one thousand dollars to start with on even the cheapest foothill lands. There will be some years of close effort. Poultry must be kept, vegetables raised, odd jobs of work done for the neighbors. But thus, on even this small capital, a valuable property can be developed in the course of eight or ten years. A small piece of good land is better than a large piece of poor land. It is best to purchase only as much land as can certainly be paid for. Develop this thoroughly, and make it profitable, and more land can be had at some future time. Many failures have arisen from attempting too much. The new settler who deserves success, begins at bed-rock, keeps out of debt, buys as little as he can, wears his old clothes, works early and late, plants trees and vines for the future, leaves whisky alone, and has a definite aim and plan in life. Such a man can come to California with a small capital, and find it a "good State for the poor man." Those who are content to work and be patient here will find the reward sure and ample. Is it not worth while to have a home in a land where there are no violent extremes of heat and cold, and where the farmer can work in comfort every month in the year?

APPROXIMATE WAGES PER DAY AND WEEK WITHOUT BOARD.

Wages for ordinary day laborers range from $1 to $2 per day, or $12 per week; good labor, requiring familiarity with the work in hand, brings $2 50, and skilled workmen, such as machinists, jewelers, etc., receive $3 and $4, and even more per day. Bricklayers, $2 and $3 50 per day, or $21 per week; carpenters, $2 and $3 per day, or $18 per week; masons, $21 per week; painters, $2 and $3 50 per day, or $18 per week; blacksmiths, $21 per week; cabinet-makers, $2 50 and $3 50 per day, or $21 per week; shoemakers, $16 25 per week; tailors, $17 per week; tinsmiths, $15 per week; stone-cutters, $3 to $4 per day, or $21 per week; harvest hands, with board, $2 and upwards; regular farm hands, with board, per month, $20 to $30.

There is and has been for many years a surplus of skilled labor at certain seasons. The best opening in this State is for agriculturists, who come with experience, and money sufficient to establish homes for themselves.

Wearing apparel is about as cheap as in the Atlantic States.

Household goods, farming appliances, stock, fruit trees, plants, and other supplies required by new settlers, can be purchased nearly as cheap in California as in the East.

The following is a list of prices of some of the most important articles of immediate use to immigrants:

HOUSEHOLD GOODS.

Cooking stoves, furniture complete, $15 and upwards.
Tinware, about the same as Eastern prices.
Queensware, same as Eastern prices.
Tables, $2 and upwards.
Chairs, 60 cents and upwards.
Bedsteads, $3 and upwards.
Common carpet, two-ply, 75 cents to $1 25.
Common carpet, three-ply, $1 25 to $1 50.

FARMING APPLIANCES.

Wagons, $100 to $175.
Harness, $10 to $40.
Plows, $7 50 to $22.
Mowers, $100 to $250.

STOCK.

American farm horses, $75 to $150.
Half-breed and Mexican horses, $25 to $75.
Milch cows, $25 to $75.
Hogs, $5 to $9.
Sheep—Ewes, $1 50 to $5; Rams, $10 to $50.

FRUIT TREES AND PLANTS.

Apple—One and two years old, per 100, $12 50 to $20.
Pears—One and two years old, per 100, $25 to $35.
Cherries—One and two years old, per 100, $25 to $35.
Peach—One year old, per 100, $20.
Plum and Prune—One and two years old, per 100, $20 to $35.
Apricots—One and two years old, per 100, $25 to $35.
Nectarines—One and two years old, per 100, $25 to $30.
Quinces—One and two years old, per 100, $20 to $35.
Figs—One and two years old, per 100, $20.
Oranges and Lemons—One and two years old, from graft, each 75 cents to $1 50.
Persimmon—One and two years old, from graft, each 75 cents to $1 50.
Olives—Each, 50 cents to 75 cents.
Pecan—Each 50 cents.
Almond—Per 100, $20 to $25.
Filberts—Each, 50 cents.
Chestnut—Each, 50 cents to 75 cents.
English Walnut—Each, 25 cents to 50 cents.
Grapes—Foreign, per 100, $6.
Grapes—Raisin, per 100, $10.
Currants—Per 100, $6.
Gooseberries—Per 100, $5 to $6.
Blackberries—Per 100, $3.
Raspberries—Per 100, $3.
Strawberries—Per 100, $2—and special rates for greater number.

OTHER TREES.

Blue Gum—Per 100, $2 to $5.
Mulberry—Each, 75 cents.

FRUIT TREE STOCKS.

Pear—Grafting size, per 1,000, $10 to $12.
Apple—Grafting size, per 1,000, $12.
Cherry—Grafting size, per 1,000, $12.
Plum—Grafting size, per 1,000, $30.
Scions—Pear, apple, plum, and cherry, per 1,000, $5.

TRANSACTIONS

OF THE

FIRST DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of San Francisco, Alameda, and Contra Costa.

OFFICERS OF THE ASSOCIATION.

A. C. DIETZ	President
L. WALKER	Secretary
OAKLAND UNION BANK	Treasurer

DIRECTORS.

A. C. DIETZ	Oakland
J. T. HOUGHTON	Oakland
R. P. CLEMENT	San Francisco
W. E. HALE	Oakland
C. H. CUSHING	Oakland
JOHN B. WATSON	Oakland
W. E. MILLER	Oakland
D. F. MAJORS	Concord, Contra Costa County

REPORT.

Oakland, December 20, 1882.

To the honorable the State Board of Agriculture:

Gentlemen: The Directors of the First District Agricultural Association submit this their report of the transactions of said Association, for the year ending this date.

L. WALKER, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.		
To cash balance on hand October 7, 1882	$ 1,344 32	
Received for annual memberships	1,000 00	
Received on ticket account (single admission)	5,031 25	
Received on account of park privileges	3,342 51	
Received on account of sweepstakes	79 00	
		$10,797 08
Expenditures.		
In purses on trotting account	$ 1,815 00	
In purses on running account	1,125 00	
For advertising	1,851 39	
Office expense account	327 25	
Commission account	23 50	
Park expense account	944 52	
In purses on racing account	300 00	
In purses on pacing and trotting account	400 00	
In purses on bicycle account	50 00	
Premiums for military drill	260 00	
Premiums for ladies' tournament	55 00	
Premiums on live stock—cattle, swine, poultry, etc.	1,590 50	
Employés account	988 50	
Fine account	10 00	
		9,740 66
Balance cash on hand		$1,056 42
Warrant on State Controller		2,000 00
		$3,056 42

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—HORSES—THOROUGHBRED.				
Stallion, three years old and over	W. A. J. Gift	Martinez	Idler	
Stallion, three years old and over	Wm. Boots	Milpitas	Nathan Coombs	Diploma
Stallion, three years old and over	R. P. Clement	Alameda	Thad Stevens	$30 00
Stallion, one year old	W. A. J. Gift	Martinez	Billy Foote	Diploma
Stallion, one year old	J. C. Simpson	Oakland	Sir Thad	$10 00
Colt, under one year	J. C. Simpson	Oakland	Cito	$5 00
Mare, three years old and over	J. C. Simpson	Oakland	Too Soon	$20 00
Mare, two years old	W. A. J. Gift	Martinez	Miss Gift	$10 00
Mare, two years old	J. C. Simpson	Oakland	Lady Viva	Diploma
Mare, one year old	John Leach	Oakland	Miss Stevens	Diploma
Mare, one year old	R. P. Clement	Oakland	Lugena	$5 00
CLASS II—THOROUGHBRED FAMILIES.				
Stallion with not less than five of his colts	R. P. Clement	Oakland	Thad Stevens and five colts	$30 00
FAMILIES OTHER THAN THOROUGHBRED.				
Stallion with not less than five of his colts	Antonio Bellina	Haywards	Gen. Grant and five colts: May Boy, Royal Boy, Frank, Butt Cutt, Elijah Belmont	$25 00
CLASS III—HORSES OF ALL WORK.				
Stallion, three years old and over	A. A. Miller	Pleasanton	Carl Carr	
Stallion, three years old and over	R. O. Baldwin	Danville	Gold Hill	Diploma
Stallion, three years old and over	Henry Pierce	San Francisco	Alonzo Hayward	
Stallion, three years old and over	Antonio Bellina	Haywards	Gen. Grant	$20 00
Stallion, three years old and over	W. A. Munion	Dixon	Pedro, Jr.	
Stallion, three years old and over	L. Barris	San José	Dom Pedro	
Stallion, three years old and over	Chisholm & Sackrider	Oakland	Black Prince	

Stallion, three years old and over	L. Hewlett	Oakland	George Washington	
Stallion, two years old	P. J. Shafter	Olema	Black Prince	Diploma
Stallion, two years old	Antonio Bellina	Haywards	May Boy	
Stallion, two years old	W. S. Brown	Petaluma	Monarch	$15 00
Stallion, one year old	Antonio Bellina	Haywards	Frank	$10 00
Colt, under one year old	Antonio Bellina	Haywards	Butt Cutt	Diploma
Colt, under one year old	Chisholm & Sackrider	Oakland	Little Prince	$5 00
Mare, three years old and over	L. Hewlett	Oakland	Brownie H.	$15 00
Mare, three years old and over	Antonio Bellina	Haywards	Dolly	Diploma
Mare, one year old	Ben. E. Harris	San Francisco	Abbotine	$5 00
Filly, under one year	Chisholm & Sackrider	Oakland	Lill	$5 00
CLASS IV—ROADSTERS.				
Stallion, four years old and over	W. K. Robinson	Santa Ana	Odd Fellow	Diploma
Stallion, four years old and over	P. J. Shafter	Olema	Rustic	$25 00
Stallion, four years old and over	W. D. Hammond	Oakland	Grand Moor	
Stallion, four years old and over	Henry Pierce	San Francisco	Alonzo Hayward	
Stallion, four years old and over	E. Stone	San Leandro	James Lick	
Stallion, three years old	J. F. Houghton	Oakland	Belmont Chief	$20 00
Stallion, three years old	J. C. Simpson	Oakland	Anteeo	
Stallion, two years old	Chas. Durerr	Suñol	Meteor	
Stallion, two years old	George Copsey	Oakland	Redwood	Diploma
Stallion, two years old	L. Hewlett	Oakland	Echo, Jr.	$15 00
Stallion, two years old	James M. Learned	Stockton	Harmony	
Yearling	P. J. Shafter	Olema	Viking	
Yearling	J. A. Goldsmith	Oakland	Sidney	$10 00
Yearling	J. A. Goldsmith	Oakland	Judge S.	Diploma
Yearling	Antonio Bellina	Haywards	Elijah Belmont	
Yearling	J. C. Simpson	Oakland	Antevolo	
Suckling colt	W. D. Hammond	Oakland	Tom Moore	$5 00
Suckling colt	W. D. Hammond	Oakland	Maid of the Oak	
Suckling colt	Antonio Bellina	Haywards	Royal Boy	Diploma
Suckling colt	Ben. E. Harris	San Francisco	Littleton	
Suckling colt	Ben. E. Harris	San Francisco	Style	
Mare or gelding, three years old and over	W. K. Robinson	Santa Ana	Patriarch	$10 00
Mare or gelding, three years old and over	D. Berry	Oakland	Molly	
Mare or gelding, three years old and over	W. D. Hammond	Oakland	Lady Lightfoot	Diploma
Mare or gelding, three years old and over	W. D. Hammond	Oakland	Hambletonian	
Mare or gelding, three years old and over	F. Rosenstock	Oakland	Prince	
Mare or gelding, two years old	L. J. Rose	Los Angeles	No Name	$5 00
Yearling	Chas. Durerr	Suñol	Gotdelse	
Yearling	Ben. E. Harris	San Francisco	Rose Abbott	$10 00
Suckling colt	W. D. Hammond	Oakland	Maid of the Oak	$5 00

First Department—Continued.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Suckling colt	Ben. E. Harris	San Francisco	Littleton	
Suckling colt	Ben. E. Harris	San Francisco	Style	
Matched spans (two or more to compete), owned and used by one person	C. Younger	San José	Whisper and mate	
Matched spans (two or more to compete), owned and used by one person	S. W. Sawyer	Oakland	Prince and Bill	Diploma
Matched spans (two or more to compete), owned and used by one person	Newland & Pumyea	Oakland	Jack and John	$25 00
CLASS V—DRAFT HORSES.				
Stallion, three years old and over	A. J. Pierce	Point Areyes	Charlemagne	
Stallion, three years old and over	W. S. Brown	Petaluma	Tornado	$20 00
Stallion, three years old and over	Chisholm & Sackrider	Oakland	French Spy	Diploma
Stallion, three years old and over	Chisholm & Sackrider	Oakland	Papalon	
Stallion, three years old and over	Chisholm & Sackrider	Oakland	French Spy 2d	
Stallion, two years old	F. Thalman	Panole	Panole Chief	$15 00
Stallion, one year old	Chisholm & Sackrider	Oakland	Drede	$10 00
Stallion, under one year	Chisholm & Sackrider	Oakland	Spy, Jr.	$5 00
Mare, three years old and over	Chisholm & Sackrider	Oakland	Kate	
Mare, one year old	W. S. Brown	Petaluma	Gertrude	$5 00
Mare, one year old	Chisholm & Sackrider	Oakland	Lizzie	Diploma
Mare, under one year	Chisholm & Sackrider	Oakland	Puss	$5 00
CLASS VI—CARRIAGE HORSES.				
Span of carriage horses, to be sixteen hands high, or over, owned and used by one person, shown to carriage or buggy—two or more to compete	Mrs. Rose Duffy	Oakland	Jack and George	$20 00
Saddle horse of either sex	Ben. E. Harris	San Francisco	Mike Price	$10 00
Saddle horse of either sex	Ben. E. Harris	San Francisco	Major	Diploma
SWEEPSTAKES.				
Stallion of any breed or age	W. K. Robinson	Santa Ana	Odd Fellow	Diploma
Stallion of any breed or age	W. D. Hammond	Oakland	Grand Moor	
Stallion of any breed or age	Henry Pierce	San Francisco	Alonzo Hayward	
Stallion of any breed or age	Antonia Bellina	Haywards	General Grant	
Stallion of any breed or age	J. C. Simpson	Oakland	Anteeo	$50 00
Mare of any breed or age	J. C. Simpson	Oakland	Lady Viva	$30 00

CLASS VII—JACKS.				
Jacks, two years old and over	W. A. Munion	Dixon	John Henry	$20 00
CLASS 1—DURHAM CATTLE.				
Bull, three years old and over	Coleman Younger	San José	2d Duke of Alameda	$25 00
Bull, three years old and over	Paige Bros.	Sonoma County	El Medico	$10 00
Bull, two years old	Paige Bros.	Sonoma County	Cherry Prince	$20 00
Bull, two years old	Paige Bros.	Sonoma County	Lord Clover	$10 00
Bull, one year old	Coleman Younger	San José	3d Duke of Alameda	
Bull, one year old	Coleman Younger	San José	Forest King	$10 00
Bull, one year old	Coleman Younger	San José	4th Duke of Forest Home	$5 00
Bull, one year old	Sylvester Scott	Cloverdale	Royal Oxford	
Bull calf, under one year	Coleman Younger	San José	5th Duke of Forest Home	
Bull calf, under one year	Coleman Younger	San José	8th Duke of Forest Home	$5 00
Bull calf, under one year	Paige Bros.	Sonoma County	Roscoe	
Cow, three years old and over	Coleman Younger	San José	2d Rose of Forest Home	
Cow, three years old and over	Coleman Younger	San José	Red Dolly the 2d	$10 00
Cow, three years old and over	Coleman Younger	San José	Jessie Maynard	$20 00
Cow, three years old and over	Paige Bros.	Sonoma County	Belle Christmas	
Cow, three years old and over	Paige Bros.	Sonoma County	Madie	
Cow, three years old and over	Paige Bros.	Sonoma County	Rosita	
Cow, two years old	Coleman Younger	San José	7th Rose of Forest Home	
Cow, two years old	Coleman Younger	San José	Oxford Rose the 3d	$15 00
Cow, two years old	Paige Bros.	Sonoma County	Belle of Sonoma	$10 00
Cow, one year old	Coleman Younger	San José	9th Rose of Forest Home	
Cow, one year old	Coleman Younger	San José	Red Dolly the 9th	
Cow, one year old	Coleman Younger	San José	Red Dolly the 11th	
Cow, one year old	Coleman Younger	San José	5th Louan of Forest Home	
Cow, one year old	Paige Bros.	Sonoma County	Natalie	
Cow, one year old	Paige Bros.	Sonoma County	Rosette	
Cow, one year old	Paige Bros.	Sonoma County	Belle Medico	$10 00
Cow, one year old	Paige Bros.	Sonoma County	Lady Clover	
Heifer calf, under one year	Coleman Younger	San José	10th Rose of Forest Home	
Heifer calf, under one year	Coleman Younger	San José	Red Dolly the 14th	$5 00
Heifer calf, under one year	Paige Bros.	Sonoma County	Maita	
CLASS II—AYRSHIRE CATTLE.				
Bull, three years old and over	George Bement	Redwood City	Archie	$25 00
Bull, two years old	George Bement	Redwood City	Lindo	$20 00
Bull, one year old	George Bement	Redwood City	Macbeth	$10 00
Bull calf, under one year	George Bement	Redwood City	Malcomb	$5 00
Cow, three years old and over	George Bement	Redwood City	Stellita	$20 00
Cow, three years old and over	George Bement	Redwood City	Ethel Brown	$10 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Cow, three years old and over	George Bement	Redwood City	Elaine	
Cow, two years old	George Bement	Redwood City	Stellinita	$15 00
Cow, one year old	George Bement	Redwood City	Sultana	$10 00
Heifer calf, under one year	George Bement	Redwood City	Sybil	$5 00
CLASS III—JERSEY OR ALDERNEY AND GUERNSEY, IN ONE CLASS.				
Bull, three years old and over	Henry Pierce	San Francisco	Champion of G. (Guernsey)	$10 00
Bull, three years old and over	Henry Pierce	San Francisco	Victor of Y. B. (Jersey)	$25 00
Bull, two years old	J. S. Wall	Oakland	Modoc (Jersey)	$10 00
Bull, two years old	A. J. Snyder	Oakland	James Hayward (Jersey)	$20 00
Bull, one year old	J. S. Emery	Oakland	Terry	
Bull, one year old	Henry Pierce	San Francisco	William Scituate (Jersey)	$10 00
Bull. one year old	Henry Pierce	San Francisco	Electrice of Y. B. (Jersey)	$5 00
Bull, one year old	F. K. Shattuck	Oakland	St. Valentine (Jersey)	
Bull, one year old	William Mahoney	Berkeley	Young Glory (Jersey)	
Calf, under one year	Henry Pierce	San Francisco	Lorne of Y. B. (Guernsey)	
Calf, under one year	Henry Pierce	San Francisco	Shotover (Jersey)	$5 00
Calf, under one year	Henry Pierce	San Francisco	Don (Jersey)	
Cow, three years old and over	Henry Pierce	San Francisco	Lizzie of Guernsey (Guernsey)	
Cow, three years old and over	Henry Pierce	San Francisco	Daisy of Guernsey (Guernsey)	
Cow, three years old and over	Henry Pierce	San Francisco	Lassie of Guernsey (Guernsey)	
Cow, three years old and over	Henry Pierce	San Francisco	Lilly of Guernsey (Guernsey)	
Cow, three years old and over	Henry Pierce	San Francisco	Maid of Oakland (Jersey)	
Cow, three years old and over	Henry Pierce	San Francisco	Bloomer 2d (Jersey)	$20 00
Cow, three years old and over	Henry Pierce	San Francisco	Blanche (Jersey)	
Cow, three years old and over	Henry Pierce	San Francisco	Eva (Jersey)	
Cow, three years old and over	Henry Pierce	San Francisco	Mon. Plaisier (Jersey)	
Cow, three years old and over	Henry Pierce	San Francisco	Fairy of Yerba Buena (Jersey)	$10 00
Cow, three years old and over	Henry Pierce	San Francisco	Princess 4th (Jersey)	
Cow, three years old and over	Henry Pierce	San Francisco	Buena of Yerba Buena (Jersey)	
Cow, three years old and over	J. S. Wall	Oakland	Young Duchess (Jersey)	
Cow, three years old and over	J. S. Wall	Oakland	Bonita (Jersey)	
Cow, three years old and over	A. J. Snyder	Oakland	Lizzie (Jersey)	
Cow, three years old and over	F. T. Shattuck	Berkeley	Vanity (Jersey)	
Cow, three years old and over	P. J. Shafter	Olema	Mouse (Jersey)	
Cow, three years old and over	Mrs. R. P. Clement	Alameda County	Jessie Weeks 2d	
Cow, three years old and over	Mrs. R. P. Clement	Alameda County	Alfalfa	
Cow, two years old	Mrs. R. P. Clement	Alameda County	Nancy (Jersey)	$15 00

Cow, one year old	Henry Pierce	San Francisco	Eva 3d of Yerba Buena (Jersey)	
Cow, one year old	Henry Pierce	San Francisco	Coquette of Y. B. (Jersey)	
Cow, one year old	Henry Pierce	San Francisco	Flora of Yerba Buena (Jersey)	
Cow, one year old	Henry Pierce	San Francisco	Carrie of Yerba Buena (Jersey)	$10 00
Cow, one year old	A. J. Snyder	Oakland	Dot of Yerba Buena (Jersey)	
Cow, one year old	Mrs. R. P. Clement	Alameda County	Viva (Jersey)	
Cow, one year old	Mrs. R. P. Clement	Alameda County	Bunny S. (Jersey)	
Heifer calf, under one year	Henry Pierce	San Francisco	Coomassie of Y. B. (Jersey)	$5 00
Heifer calf, under one year	Henry Pierce	San Francisco	Mignon of Yerba Buena	
Heifer calf, under one year	Henry Pierce	San Francisco	Alta of Yerba Buena	
Heifer calf, under one year	J. S. Wall	Oakland	Jennie the 2d	
Sweepstakes.				
CLASS I—DURHAMS, HOLSTEINS, HOLDERNESS, HEREFORDS, AND DEVONS.				
Bull	Coleman Younger	San José	2d Duke of Alameda (Durham)	$40 00
Bull	Coleman Younger	San José	3d Duke of Alameda (Durham)	$20 00
Bull	Paige Bros.	Sonoma County	El Medico (Durham)	
Bull	Paige Bros.	Sonoma County	Cherry Prince (Durham)	
Bull	S. Scott	Cloverdale	Royal Oxford (Durham)	
Cow	Coleman Younger	San José	Jessie Maynard (Durham)	$30 00
Cow	Coleman Younger	San José	Red Dolly the 2d (Durham)	$15 00
Cow	Paige Bros.	Sonoma County	Belle Christmas (Durham)	
Cow	Paige Bros.	Sonoma County	Rosette (Durham)	
Cow	Paige Bros.	Sonoma County	Belle Sonoma (Durham)	
Cow	Paige Bros.	Sonoma County	Natalie (Durham)	
CLASS II—AYRSHIRES, JERSEYS OR ALDERNEYS, AND GUERNSEYS.				
Cow	H. Pierce	San Francisco	Bloomer 2d (Jersey)	$30 00
Cow	H. Pierce	San Francisco	Imp. Lizzie of G. (Guernsey)	
Cow	George Bement	Redwood City	Eldine (Ayrshire)	$15 00
CLASS III—HERDS—THOROUGHBRED.				
Durham cattle, over two years old, to consist of one male and four females, owned by one person	Coleman Younger	San José	2d Duke of Alameda, 2d Rose of Forest Home, Red Dolly the 2d, Jessie Maynard, Red Dolly the 5th	$40 00
Durham cattle, over two years old, to consist of one male and four females, owned by one person	Paige Bros.	Sonoma County	El Medico, Belle Christmas, Madie, Rosette, Belle Sonoma	

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Durham cattle, under two years, to consist of one male and four females, owned by one person	Coleman Younger	San José	3d Duke of Alameda, Red Dolly the 9th, Red Dolly the 11th, 5th Louan of Forest Home, 9th Rose of Forest Home	$20 00
Durham cattle, under two years, to consist of one male and four females, owned by one person	Paige Bros.	Sonoma County	Roscoe, Natalie, Belle Medico, Rosette, Maita	
Jersey or Alderney cattle, over two years old, to consist of one male and four females, owned by one person	Henry Pierce	San Francisco	Victor of Yerba Buena, Bloomer 2d, Oakland Maid, Mon. Plaisier, Fairy of Yerba Buena	$40 00
Jersey or Alderney cattle, under two years old, to consist of one male and four females, owned by one person	Henry Pierce	San Francisco	William Scituate, Eva 32d of Yerba Buena, Coquette of Y. B., Carrie of Y. B. (Jerseys)	$20 00
Guernsey cattle, of any age, to consist of one male and four females, owned by one person—Silver Pitcher or cash, $40	Henry Pierce	San Francisco	Champion of Guernsey, Lizzie of Guernsey, Lassie of Guernsey, Lilly of Guernsey, Daisy of Guernsey	$40 00
Ayrshire cattle, of any age, to consist of one male and four females, owned by one person	George Bement	Redwood City	Archie, Stellita, Ethel Brown, Elaine, Sultana	$40 00
CLASS V—GRADED CATTLE.				
Cow, three years old and over	F. Rosenstock	Oakland	Betsey	$20 00
Cow, two years old	F. Rosenstock	Oakland	Mina	$15 00
CLASS VII—SHEEP—SPANISH MERINO.				
Ram, two years old and over	J. H. Strowbridge	Haywards	Sprightly	$10 00
Ram, one year old	J. H. Strowbridge	Haywards	Comet	$7 50
Ram, one year old	J. H. Strowbridge	Haywards	Lengthy	$5 00
Ram, one year old	E. W. Woolsey & Son	Sonoma County	Long Wool	
Pen of five ewes, two years old and over	E. W. Woolsey & Son	Sonoma County		
Pen of five ewes, two years old and over	J. H. Strowbridge	Haywards		$10 00
Pen of five ewes, one year old	E. W. Woolsey & Son	Sonoma County		

Pen of five ewes, one year old	J. H. Strowbridge	Haywards		$10 00
Pen of five ewe lambs	E. W. Woolsey & Son	Sonoma County		
Pen of five ewe lambs	J. H. Strowbridge	Haywards		$5 00
Ram and five of his lambs	J. H. Strowbridge	Haywards	Sprightly and five of his lambs	$10 00
Ram and five of his lambs	E. W. Woolsey & Son	Sonoma County	Long Wool and five of his lambs	
Cotswold ram	C. Younger	San José	Hancock	$10 00
Southdown ram	George Bement	Redwood City		$10 00
Pen of Cotswold ewes, one year old and over	C. Younger	San José	Five ewes	$7 50
Sweepstakes.				
Best ram, of any age or breed	J. H. Strowbridge	Haywards	Sprightly, two years old, Spanish Merino	$20 00
Second best ram, of any age or breed	E. W. Woolsey & Son	Sonoma County	Long Wool, one year old, Spanish Merino	$10 00
CLASS VIII—SWINE.				
Berkshire boar	C. L. Dietz	Oakland		$10 00
Berkshire boar	T. McInnerny	Alameda County	Sam	
Berkshire sow	C. L. Dietz	Oakland		$10 00
CLASS IX—POULTRY.				
Light Brahmas, cock and two hens	J. N. Lund	Oakland		
Light Brahmas, cock and two hens	W. Hubbard	Oakland		$2 50
Light Brahmas, cock and two hens	E. Wolfenden	Oakland		
Dark Brahmas, one pair	E. Wolfenden	Oakland		$2 50
Partridge Cochin, cock and hen	W. Hubbard	Oakland		$2 50
Buff Cochin, cock and two hens	E. Wolfenden	Oakland		$2 50
Plymouth Rocks, cock and two hens	J. N. Lund	Oakland		
Plymouth Rocks, cock and two hens	J. N. Lund	Oakland		
Plymouth Rocks, cock and two hens	J. N. Lund	Oakland		
Plymouth Rocks, cock and two hens	J. N. Lund	Oakland		
Plymouth Rocks, cock and two hens	J. N. Lund	Oakland		
Plymouth Rocks, cock and hen	W. Hubbard	Oakland		
Plymouth Rocks, cock and two hens	E. Wolfenden	Oakland		
Brown Leghorns, cock and two hens	J. N. Lund	Oakland		$2 50
Brown Leghorns, cock and two hens	J. N. Lund	Oakland		
Brown Leghorns, cock and two hens	J. N. Lund	Oakland		
Brown Leghorns, cock and hen	W. Hubbard	Oakland		
Brown Leghorns, cock and two hens	C. L. Dietz	Oakland		
Brown Leghorns, cock and two hens	E. Wolfenden	Oakland		
White Faced Black Spanish, cock and two hens	J. W. Cumming	North Temescal		$2 50
Golden Spangled Polish, cock and pullet	A. T. Jackson	Oakland		$2 50
Golden Spangled Polish, six small chickens, 3 months old	A. T. Jackson	Oakland		

First Department—Continued.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Black Breasted Games, cock and two hens	C. L. Deitz	Oakland		$2 50
Black Breasted Games, cock and two hens	F. E. Fairbanks	Temescal		
Blue Games, cock and hen	W. Hubbard	Oakland		$2 50
Langshans, cock and pullet	J. W. Cumming	North Temescal		
Langshans, cock and pullet	J. W. Cumming	North Temescal		
Langshans, cock and pullet	J. W. Cumming	North Temescal		
Langshans, cock and two pullets	Mrs. J. Royner	San Francisco		Spe. premium
Langshans, cock and two pullets	Mrs. J. Royner	San Francisco		$2 50
Langshans, cock and hen	J. N. Lund	Oakland		
Black Breasted Game Bantams, cock and hen	J. N. Lund	Oakland		$2 50
Black African Bantams, cock and two hens	C. L. Dietz	Oakland		$2 50
White Pile Game Bantams, cock and two hens	C. L. Dietz	Oakland		$2 50
Pekin ducks, one pair	W. Hubbard	Oakland		
Pekin ducks, male and two females	C. L. Dietz	Oakland		$2 50
Pigeons, one pair Jacobins	J. N. Lund	Oakland		$1 00
Pigeons, one pair Carrier	C. L. Dietz	Oakland		$1 00
Pigeons, one pair Flying Pouters	C. L. Dietz	Oakland		$1 00
Best and largest collection of poultry exhibited by one person or firm, twenty-eight chickens	J. N. Lund	Oakland		$10 00

SECOND DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS II—SECOND DIVISION.			
Judson Manufacturing Company	San Francisco	Victor mowing machine, California make	$25 00
CLASS III—THIRD DIVISION.			
California Gate Company	Oakland	Automatic gate, Robinson's patent	$5 00
Aylward & Stanley	Livermore	Self-opening automatic gate	Diploma
Mann & Hatch	Oakland	Centennial wind engine	$20 00

SPEED PROGRAMME.

MONDAY, SEPTEMBER 4TH, 1882.

RACE NO. 1—RUNNING.

Golden Gate Stake for all two-year-olds. Three-quarters mile dash. Fifty dollars entrance; fifteen dollars forfeit; one hundred and fifty dollars added. Second colt to save stake. Winners five pounds extra.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Satanella, by Leveller; dam, Frou Frou	Leland Stanford	Palo Alto
Satinet, by Wildidle; dam, Rose	Leland Stanford	Palo Alto
Panama, by Shannon; dam, Abbie W.	C. Van Buren	Mayfield
Flou Flou, by Monday; dam, Jennie C.	Peter Coutts	Mayfield
May B., by Shannon	Peter Robson	San Francisco

Position at Starting.	Position at Close.	
1. Flou Flou	May B.	1
2. Satanella	Satanella	2
3. May B.	Flou Flou	3

Time—1:17.

RACE NO. 2—RUNNING.

Alameda Stake for three-year-olds. One and one half mile dash. Seventy-five dollars entrance; twenty-five dollars forfeit; one hundred and seventy-five dollars added. Second horse to save stake.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Precious, by Lever; dam, Frolic	Leland Stanford	Palo Alto
Fostress, by Foster; dam, Planetia	Leland Stanford	Palo Alto
Forest King, by Monday; dam, Abbie W.	Peter Coutts	Mayfield
Duke of Monday, by Monday; dam, Demirep	Geo. Hearst	San Francisco
Maria F., by Leinster; dam, Flush	Geo. Hearst	San Francisco

Position at Starting.	Position at Close.	
1. Duke of Monday	Duke of Monday	1
2. Precious	Precious	2

Time—2:41½.

RACE NO. 3—RUNNING.

Pardee Stake. Free for all. Mile and repeat. Seventy-five dollars entrance; twenty-five dollars forfeit; two hundred dollars added. Second horse to save stake.

Name and Pedigree of Horse.	By whom Entered.	P. O. Address.
Night Hawk, by imported Haddington; dam, by Norfolk	P. J. Shafter	San Francisco
Precious, by Lever; dam, Frolic	Leland Stanford	Palo Alto
Fostress, by Foster; dam, Planetia	Leland Stanford	Palo Alto
Sister to Lottery, by Monday	Henry Schwartz	San Francisco
Red Boy, by War Dance; dam, Neilson	I. T. Gilmer	Salt Lake
Fred Collier, by Joe Hooker; dam, Puss	Stemler & Ayres	Portland, Or

Position at Starting.	*Position at Close.*	
1. Night Hawk	Red Boy	1
2. Red Boy	Night Hawk	2

Time—1:42½; 1:45½.

RACE NO. 4—TROTTING.

2:40 Class. Mile heats, best three in five. Purse, six hundred dollars. First horse, three hundred and sixty dollars; second horse, one hundred and eighty dollars; third horse, sixty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Manon, by Nutwood; dam, Addie	Peter Coutts	Mayfield
Frank Moscow, by Frank Moscow	A. B. Cooper	Alameda
Freestone, by Capt. Webster	Mart. Rollins	San Francisco
Allen Roy, by unknown	G. Bernard	San Francisco
San Mateo Belle, by Speculation	W. Z. Price	San Mateo
Marin, by Geo. M. Patchen	B. F. Miller	San Rafael
Vanderlynn, by Geo. M. Patchen	P. Farrell	San Francisco
Rowdy Boy, by Rustic	James Garland	San Francisco
Louis D., by unknown	Louis Duncan	Santa Clara
Big Lize, by unknown	W. H. Henderson	San José
Exile, by Echo	L. H. Titus	San Gabriel
Edwin Forrest, by Blackbird	E. F. Smith	Sacramento

Position at Starting.	*Position at Close.*	
1. Freestone	Manon	1
2. Vanderlynn	Louis D.	2
3. Louis D.	San Mateo Belle	3
4. Big Lize	Marin	4
5. San Mateo Belle	Big Lize	5
6. Edwin Forrest	Frank Moscow	6
7. Marin	Vanderlynn	7
8. Frank Moscow	Edwin Forrest	8
9. Manon	Freestone	9

Time—2:26; 2:27; 2:27¼; 2:24.

TUESDAY, SEPTEMBER 5TH, 1882.

RACE NO. 5—TROTTING.

2:30 Class.. Purse, eight hundred dollars. First horse, four hundred and eighty dollars; second horse, two hundred and forty dollars; third horse, eighty dollars. Mile heats, best three in five.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Poscora, by Billy Hayward	W. D. Hammond	East Oakland
Blanche, by Gray McClellan	William Bihler	Santa Rosa
Sweetness, by Volunteer	J. A. Goldsmith	San Francisco
Nellie R., by General McClellan	S. S. Perry	Petaluma
Albert W., by Electioneer	A. Waldstein	San Francisco

Position at Starting.	*Position at Close.*	
1. Sweetness	Albert W.	1
2. Poscora Hayward	Nellie R.	2
3. Nellie R.	Sweetness	3
4. Albert W.	Poscora Hayward	4

Time—2:22; 2:24½; 2:23½; 2:28¼; 2:26½; 2:25; 2:26½.

RACE NO. 6—PACING.

Purse, five hundred dollars. Free for all pacers (Washington and Johnny Weigle to wagons). First horse, three hundred dollars; second horse, one hundred and fifty dollars; third horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Corette, by Winthrop	L. E. Yates	Oakland
Lady Hays, by Hiram Tracy	E. S. Dennison	Oakland
Oakland Boy, by Winthrop	A. L. Hinds	Oakland
Ouida, by Black Hawk	G. Valensin	Sacramento Co

Position at Starting.	*Position at Close.*	
1. Lady Hays	Corette	1
2. Corette	Ouida	2
3. Ouida	Lady Hays	3
4. Oakland Boy	Oakland Boy	dis

WEDNESDAY, SEPTEMBER 6TH, 1882.

RACE NO. 7—RUNNING.

Free for all. Two-mile dash. Entrance, one hundred dollars; twenty-five dollars forfeit; two hundred and fifty dollars added. Second to save stake.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Night Hawk, by imp. Haddington	P. J. Shafter	Olema
Precious, by Lever	Leland Stanford	Palo Alto
Mollie H., by Wildidle	William Boots	Milpitas
Red Boy, by War Dance	J. T. Gilmer	Salt Lake
Fred. Collier, by Joe Hooker	Stemler & Ayres	Portland, Or

Race No. 7—Continued.

Position at Starting.	*Position at Close.*	
1. Mollie H.	Precious	1
2. Precious	Mollie H.	2

Time—3:36.

Race No. 8—Trotting.

Free for all three-year-olds. Purse, six hundred dollars. First horse, three hundred and sixty dollars; second horse, one hundred and eighty dollars; third horse, sixty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Anteeo, by Electioneer	J. C. Simpson	Oakland
Adrian, by Reliance	J. M. Learned	Stockton
Olivette, by Whipple's Hambletonian	I. J. Fairbanks	Oakland
Bonnie Wood, by Nutwood	Horace Meeks	San Lorenzo
Commodore, by Conductor	J. B. Wyman	Oakland
Filly, by Admiral	Mr. Babb	Vallejo
Fred Arnold, by Nephew	Irving Ayres	Stockton

Position at Starting.	*Position at Close.*	
1. Fred Arnold	Adrian	1
2. Olivette	Bonnie Wood	2
3. Bonnie Wood	Fred Arnold	3
4. Adrian	Olivette	dis.

Time—2:41½; 2:37¾; 2:33½.

Race No. 9—Trotting.

2:22 Class. Purse, eight hundred dollars. First horse, four hundred and eighty dollars; second horse, two hundred and forty dollars; third horse, eighty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Brigadier, by Happy Medium	J. B. McDonald	Marysville
Romero, by A. W. Richmond	J. A. Goldsmith	San Francisco
Belle Echo, by Echo	L. H. Titus	San Gabriel

Position at Starting.	*Position at Close.*	
1. Brigadier	Brigadier	1
2. Belle Echo	Belle Echo	2

Time—2:27; 2:23½; 2:22¼; 2:24½.

THURSDAY, SEPTEMBER 7TH, 1882.

Race No. 10—Trotting.

Purse, four hundred dollars. Free for all two-year olds. Mile and repeat. First horse, one hundred and sixty-eight dollars; second horse, sixty-seven dollars and twenty cents; third horse, forty-four dollars and eighty cents.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Neluska, by Sultan	L. J. Rose	San Gabriel
Ruby, by Sultan	S. Rosener	San Francisco

RACE NO. 10—Continued.

Position at Starting.	Position at Close.	
1. Neluska	Ruby	1
2. Ruby	Neluska	2

Time—2:30½; 2:37½; 2:40.

RACE NO. 11—TROTTING.

Free for all four-year-olds. Purse, six hundred dollars. First horse, three hundred and sixty dollars; second horse, one hundred and eighty dollars; third horse, sixty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rowdy Boy, by Rustic	James Garland	San Francisco
Albert W., by Electioneer	A. Waldenstein	San Francisco

Albert W.—Drawn.

SPECIAL TROTTING.

Purse, six hundred dollars. First horse, two hundred and sixty-five dollars; second horse, one hundred and thirty dollars; third horse, eighty-five dollars; fourth horse, sixty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Frank Moscow	O. B. Cooper	Alameda
Rowdy Boy	James Garland	San Francisco
Marin	B. F. Miller	San Rafael
Vanderlynn	P. F. Farrell	San Francisco

Position at Starting.	Position at Close.	
1. Vanderlynn	Vanderlynn	1
2. Marin	Rowdy Boy	2
3. Rowdy Boy	Frank Moscow	3
4. Frank Moscow	Marin	4

Time—2:30; 2:27½; 2:30¼; 2:28½.

RACE NO. 12—RUNNING.

Selling Race. Purse, two hundred and fifty dollars. First horse, one hundred and seventy-five dollars; second horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Haddington, by imported Haddington	P. J. Shafter	Olema, Marin Co
Jack Douglass, by Wildidle	John A. Cardinell	San Francisco
Inauguration, by Wildidle	Wm. Boots	Milpitas
Sister to Lottery, by Monday	Henry Schwartz	San Francisco
Euchre, by Leinster	Stemler & Ayres	Portland, Or
Joe Howell, by imported Bonnie Scotland	Stemler & Ayres	Portland, Or

Position at Starting.	Position at Close.	
1. Inauguration	Euchre	1
2. Haddington	Inauguration	2
3. Euchre	Haddington	3

Time—1:43¾.

FRIDAY, SEPTEMBER 8TH, 1882.

RACE NO. 13—RUNNING.

Consolation Purse, for beaten horses. Purse, two hundred and fifty dollars. First horse, one hundred and seventy-five dollars; second horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Inauguration, by Wildidle	Wm. Boots	Milpitas
Night Hawk, by Haddington	P. J. Shafter	Olema

Position at Starting.		*Position at Close.*	
1.	Inauguration	Night Hawk	1
2.	Night Hawk	Inauguration	2

Time—2:12.

RACE NO. 14—TROTTING.

2:25 Class. Mile heats, best three in five. Purse, eight hundred dollars. First horse, four hundred and eighty dollars; second horse, two hundred and forty dollars; third horse, eighty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Starr King, by Geo. M. Patchen	C. W. Welby	San Francisco
Ashley, by Plumas	Jackson Cochran	Chico
Del Sur, by The Moor	L. J. Rose	San Gabriel
Director, by Dictator	J. A. Goldsmith	San Francisco
Honesty, by Priam	J. H. Dodge	Stockton
Echora, by Echo	L. H. Titus	San Gabriel
Crown Point, by Hambletonian	G. Valensin	Sacramento Co
Reliance, by Alexander	J. M. Learned	Stockton
Cairo, by Chieftain	John Hughes	San Francisco

Position at Starting.		*Position at Close.*	
1.	Ashley	Director	1
2.	Del Sur	Honesty	2
3.	Honesty	Cairo	3
4.	Starr King	Del Sur	4
5.	Director	Ashley	5
6.	Cairo	Starr King	6
7.	Reliance	Reliance	7

Time—2:22½; 2:24½; 2:24; 2:24½.

RACE NO. 15—TROTTING.

Purse of fifty dollars. Free for all yearlings making best time, a full mile in harness.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Antevolo, by Electioneer	J. C. Simpson	Oakland
Dawn, by Nutwood	George Bayless	Petaluma
Viking, by Rustic	P. J. Shafter	Olema
Mount Vernon, by Nutwood	J. A. McCloud	Stockton
Filly, by Sultan (Gertrude)	L. J. Rose	San Gabriel

Time—Antevolo, 3:12; 3:07. Viking, 3:27; 3:16.

SATURDAY, SEPTEMBER 9th, 1882.

Race No. 16—Trotting and Pacing.

Purse of eight hundred dollars. Free for all pacers and trotters. First horse, four hundred and eighty dollars; second horse, two hundred dollars; third horse, one hundred and twenty dollars; fourth horse, eighty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Gibraltar, by Echo	J. A. Goldsmith	San Francisco
Romero, by A. W. Richmond	J. A. Goldsmith	San Francisco
Washington, by Bucephalus	H. A. Van Amringe	Oakland
Johnny Wiegle	Walter Mead	San Francisco
Lady Hays, by Hiram Tracy	E. S. Dennison	Oakland
Corette, by Winthrop	L. E. Yates	Oakland

Position at Starting.	*Position at Close.*	
1. Corette	Corette	1
2. Gibraltar	Gibraltar	2
3. Lady Hays	Johnny Wiegle	3
4. Johnny Wiegle	Lady Hays	4

Time—2:20; 2:19; 2:21¼.

Race No. 17—Trotting.

A set of harness is offered by the Directors to be competed for by gentlemen's roadsters, owners to drive, to road wagons; open to all.

Name of Horse.	By Whom Entered.	P. O. Address.
Emperor	S. W. Sawyer	San Francisco
Rubber Boy	C. A. Klinker	San Francisco
Brownie H.	L. E. Hewlett	Oakland
Belle	Gus. Lindauer	San Francisco
Allie Roy	James M. Learned	Stockton

Position at Starting.	*Position at Close.*	
1. Allie Roy	Brownie H.	1
2. Emperor	Emperor	2
3. Brownie H.	Allie Roy	3

Time—2:41; 2:42; 2:46.

TRANSACTIONS

OF THE

SECOND DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of San Joaquin, Calaveras, Fresno, Kern, Merced,
Mariposa, Stanislaus, Tulare, and Tuolumne.

OFFICERS OF THE ASSOCIATION.

L. U. SHIPPEE	President
J. L. PHELPS	Secretary
A. W. SIMPSON	Treasurer

DIRECTORS.

R. C. SARGENT	Woodbridge
L. U. SHIPPEE	Stockton
J. A. LOUTTIT	Stockton
J. A. SHEPHERD	Lathrop
FRED. ARNOLD	Stockton
J. E. MOORE	Stockton
JOHN H. O'BRIEN	Stockton
R. W. RUSSELL	Stockton

REPORT.

STOCKTON, December 11, 1882.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Second District Agricultural Association submit this their report of the transactions of said Association for the year ending this date.

J. L. PHELPS, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

From sale of hay, grain, storage, etc.	$ 861 09	
From entrance fees to races	6,674 25	
From sweepstake fees	2 00	
From sale of privileges	3,400 00	
From entrance to race of 1878	53 00	
From donations	225 00	
From hack privileges	346 00	
From quarter-stretch badges	189 00	
From grand stand tickets	714 00	
From season tickets	1,590 00	
From single admission tickets	3,999 25	
From State Controller's warrant	1,500 00	
From bills payable	560 00	
From donations of L. U. Shippee (premiums)	77 50	
		$20,191 09

Expenditures.

Paid premiums 1880 and 1881	$ 145 00	
Paid insurance, interest, and taxes	344 84	
Paid entrance fee refunded	50 00	
Paid permanent improvements at Park	1,145 09	
Paid purses	8,858 00	
Paid premiums to date	1,880 25	
Paid general expenses of 1882	3,362 27	
Paid bills payable	560 00	
		$16,345 45
Balance cash on hand		3,845 64
		$20,191 09

ANNUAL ADDRESS.

The annual address was delivered on Thursday evening, September 21, 1882, by his Excellency George C. Perkins, Governor of the State of California. Subjects: "Agriculture lies on the basis of Evolution;" "Scientific Farming and the Breeding of Good Stock;" "Cultured Home Life, the Gem of Patriotism."

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—THOROUGHBREDS.				
Best stallion, three years old and over	H. S. Sargent	Stockton	Joe Daniels	$30 00
Second best	Wm. Boots	Milpitas	Nathan Coombs	Special rec
Best mare, three years old and over	Wm. Boots	Milpitas	Mollie Hall	$20 00
Second best	J. N. Randall	Turlock	Alice R.	$5 00
CLASS III—HORSES FOR ALL PURPOSES.				
Best stallion, three years old and over	G. W. Trahern	Stockton	Nephew, Jr.	$30 00
Best stallion, two years old	J. N. Whiting	Stockton	——, by Priam	$15 00
Second best	W. G. Phelps	Stockton	Duroc	Special rec
Best suckling colt	Dr. C. Grattan	Stockton	Dandy	$5 00
Best mare, three years old and over	L. Hewlett	Oakland	Brownie H.	$15 00
Best mare, two years old	Wm. Thomas	Douglas Flat	Nellie Miller	$10 00
CLASS IV—ROADSTERS.				
Best stallion, four years old and over	W. E. Morris	Stockton	Upright	$30 00
Best stallion, two years old	L. Hewlett	Oakland	Echo, Jr.	$15 00
Best stallion, one year old	G. Valensin	Hicksville	Buccaneer	$10 00
Best trotting suckling colt	L. U. Shippee	Stockton	——, by Abbotsford	$5 00
Best mare or gelding, four years old and over	C. Younger	Forest Home	Whisper	$20 00
Best mare or gelding, three years old	J. B. McDonald	Marysville	Hazel Kirke	$10 00
Best mare or gelding, two years old	W. E. Morris	Stockton	Cyclone	$10 00
Best yearling filly	Noyes Bailey	Stockton	Hattie B.	$5 00
Best trotting suckling filly	Noyes Bailey	Stockton	——, by Hawthorne	$5 00
CLASS V—DRAFT HORSES.				
Best stallion, three years old and over	F. Skillman	Petaluma	Tornado	$30 00
Best stallion, two years old	F. Skillman	Petaluma	Monarch	$15 00
Best suckling colt	Uriah Martin	Stockton	——, by Enterprise	$5 00
Best mare, three years old and over	Uriah Martin	Stockton	Fannie	$15 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Best mare, one year old	F. Skillman	Petaluma	Gertrude	$5 00
Second best	L. U. Shippee	Stockton	Prince Consort, Jr.	Special rec
CLASS VI—CARRIAGE HORSES.				
Best span carriage horses, to be sixteen hands high or over, owned and used by one person, shown to carriage or buggy	O. Johnson	Modesto	Hercules and brother	$20 00
Second best	Louis Gerlach	Stockton	Sorrel geldings	$10 00
Best single buggy horse, owned and used by one person	O. Johnson	Modesto	Silvertail	$10 00
Second best	W. S. Phelps	Stockton	Flora	2d prem. rec
CLASS VII—JACKS.				
Best jack, two years old and over	R. I. Green	San Francisco	Lippincott	$20 00
Best jenny	Freeman & Shippee	Stockton	Duchess	$10 00
CLASS VIII—MULES.				
Best pair mules, owned by one person	L. U. Shippee	Stockton	Pet and Susie	$10 00
CLASS IX—DURHAM CATTLE.				
Best bull, three years old and over	C. Younger	Forest Home	2d Duke of Alameda	$25 00
Best bull, one year old	C. Younger	Forest Home	Forest King	$10 00
Best bull calf	C. Younger	Forest Home	8th Duke of Forest Home	$5 00
Best cow, three years old and over	C. Younger	Forest Home	Jessie Maynard	$20 00
Best cow, two years old	C. Younger	Forest Home	Oxford Rose 3d	$15 00
Best cow, one year old	C. Younger	Forest Home	5th Louan of Forest Home	$10 00
Best heifer calf	C. Younger	Forest Home	10th Rose of Forest Home	$5 00
CLASS XI—JERSEY CATTLE.				
Best bull, three years old and over	E. Wood	Modesto	Pinafore	$25 00
Best bull, two years old	H. S. Sargent	Stockton	Ezra Marmaluke	$20 00
Best cow, three years old and over	H. S. Sargent	Stockton	Daisy	$20 00
Best cow, two years old	H. S. Sargent	Stockton	Clark Beauty	$15 00
Best cow, one year old	H. S. Sargent	Stockton	Queen	$10 00
CLASS XII—AYRSHIRES, HEREFORDS, AND HOLSTEINS.				
Best bull, three years old and over	Geo. Bement	Redwood City	Archie	$25 00
Best bull, two years old	Geo. Bement	Redwood City	Hindoo	$20 00
Best bull, one year old	Geo. Bement	Redwood City	Macbeth	$10 00

Best cow, three years old	Geo. Bement	Redwood City	Stellita	$20 00
Best cow, two years old	Geo. Bement	Redwood City	Stellinita	$15 00
Best cow, one year old	Geo. Bement	Redwood City	Sultana	$5 00
Best bull calf	Geo. Bement	Redwood City	Malcom	Premium rec
Best heifer calf	Geo. Bement	Redwood City	Sybil	Premium rec
CLASS XIII—GRADED CATTLE.				
Best cow, three years old and over	E. Wood	Modesto	Mattie	$10 00
CLASS XIV—HERD OF CATTLE.				
Best herd of cattle of one breed, with not more than one yearling and one two-year old—not less than six head, and including one bull two years old—all owned by one person	C. Younger	Forest Home	Herd of Durhams, headed by 2d Duke of Alameda	$30 00
Best herd of cattle of one breed, all under two and a half years old, including but one bull and not more than one calf, not less than five head, all owned by one person	C. Younger	Forest Home	Herd of Durhams, headed by Forest King	$30 00
Second best	George Bement	Redwood City	Herd of Ayrshires	Spec'l recom'n
CLASS XVI—SHEEP.				
Best Spanish Merino ram, two years old and over	L. U. Shippee	Stockton	Moscow	$10 00
Best Spanish Merino ram, one year old	L. U. Shippee	Stockton		$7 50
Best pen of Spanish Merino ewes, two years old and over	L. U. Shippee	Stockton		$10 00
Best pen of Spanish Merino ewe lambs	L. U. Shippee	Stockton		$5 00
Sweepstakes.				
Best ram and five lambs	L. U. Shippee	Stockton	Moscow and five lambs	$10 00
Best Cotswold ram	C. Younger	Forest Home	Hancock	$10 00
Best Southdown ram	George Bement	Redwood City	Sonoma	$10 00
Best Cotswold ewes	C. Younger	Forest Home		$7 50
Best ram of any age in above classes and five lambs	C. Younger	Forest Home	Hancock and five lambs	$10 00
CLASS XVII—SWINE.				
Best Berkshire boar	L. U. Shippee	Stockton		$10 00
Best Berkshire sow	L. U. Shippee	Stockton		$10 00
Best Poland China boar	Dr. C. Grattan	Stockton		$10 00
Best Poland China sow	Dr. C. Grattan	Stockton		$10 00
CLASS XVIII—POULTRY.				
Premium for seven varieties	Thos. Waite	Sacramento		$17 50

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
SPECIAL PREMIUM FOR SADDLE HORSES.				
Best saddle horse	B. C. Trefry	Tulare	Black Prince	Prem. recom'd
Second best	J. W. Nixon	Sacramento	Bluchard	Prem. recom'd
BIRDS.				
Largest and best lot of singing birds	Mrs. M. S. Webb	Stockton		$10 00
Best mocking bird	Mrs. M. S. Webb	Stockton		$2 50

SECOND DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Ira W. Ladd	Stockton	5 pounds soft shell almonds	$2 00
John Bidwell	Chico	½ bushel cultivated alfalfa seed	$5 00
John Bidwell	Chico	Best 6 varieties wheat	$10 00
John Bidwell	Chico	Best 3 varieties barley	$10 00
John Bidwell	Chico	Best 50 pounds oats	$10 00
John Bidwell	Chico	Best 50 pounds rye	$10 00
John Bidwell	Chico	Best 50 pounds corn	$10 00
John Bidwell	Chico	Best 50 pounds wheat, selected from 1,000 bushels	$5 00
G. C. Holman	Lockeford	Best bale of hops	$10 00
		(In addition to premiums offered a special diploma is recommended for the exhibit of Hon. Jno. Bidwell, of Chico.)	
CLASS II—VEGETABLES.			
John Bidwell	Chico	Best and largest variety of vegetables raised on one ranch and exhibited by producer	$10 00
John Bidwell	Chico	Best and largest exhibit of vegetables, fruit, etc., by one person	$20 00
		(Special premium recommended to the State Insane Asylum for exhibit of vegetables, etc., not entered for contest.)	
CLASS IV—HORTICULTURAL.			
D. A. Learned	Stockton	Best collection of grapes	$10 00
D. A. Learned	Stockton	Best 5 varieties of grapes	$3 00
D. A. Learned	Stockton	Best single variety of grapes	$3 00
D. A. Learned	Stockton	Best 8 bunches raisin grapes	$5 00
Bert Lyons	Stockton	Best 12 specimens quinces	$3 00
W. H. Jessup	Haywards	Second best 12 specim's quinces	$1 50
Mrs. Jos. Hale	Stockton	Best box dried figs	$3 00
W. H. Jessup	Haywards	Best box dried peaches	$2 00
W. H. Jessup	Haywards	Best box dried prunes	$3 00
W. H. Jessup	Haywards	Best box dried plums	$3 00
W. H. Jessup	Haywards	Best box dried apricots	$2 00
Frank P. Adams	Stockton	Best 6 specimens figs	$3 00
W. H. Jessup	Haywards	Best box dried pears	$2 00
Bert Lyons	Stockton	Best box raisins	$3 00
John Bidwell	Chico	Largest and best collection pears	$15 00
Bert Lyons	Stockton	Best 5 varieties of pears	$3 00
W. H. Jessup	Haywards	Best colt'n plums, named var'ts	$3 00
Bert Lyons	Stockton	Second best collection of plums	$2 00
Mrs. J. C. Reid	Stockton	Best collection of pomegranates	$3 00
W. H. Jessup	Haywards	Best box dried nectarines	$2 00
W. H. Jessup	Haywards	Best box dried cherries	$2 00
Mrs. Jos. Hale	Stockton	Best 5 varieties of apples	$2 00
G. C. Holman	Lockeford	Largest and best colt'n apples	$15 00
Laura De Force Gordon	Lodi	Largest and best colt'n peaches	$5 00
W. H. Jessup	Haywards	Best exhibit of oranges	$5 00
W. H. Jessup	Haywards	Largest and best exhibit of fruit	$30 00
Bert Lyons	Stockton	Best 12 plums, one variety	$2 00
H. A. Messenger	Campo Seco	Best 3 varieties pears, five each	$2 00
H. A. Messenger	Campo Seco	Best 12 peaches, one variety	[illegible] 00
Frank P. Adams	Stockton	Best collection of figs	[illegible] 00
CLASS V—PRESERVED FRUITS, JELLIES, ETC.			
Mrs. J. C. Reid	Stockton	Best exhibit of jellies	$5 00
Mrs. C. J. Smith	Stockton	Second best exhibit of jellies	$2 50
Mrs. A. G. Brown	Stockton	Best exhibit fruits in sugar	$10 00
Mrs. J. C. Reid	Stockton	Second best ex'it fruits in sugar	$5 00
Mrs. Jos. Hale	Stockton	Best exhibit fruits in spirits	$5 00
Mrs. A. G. Brown	Stockton	Second best ex'it fruits in spirits	$2 50
Mrs. Jos. Hale	Stockton	Best exhibit of pickles	$5 00
Richard Wheeler	Sacramento	Fruits in spirits	Special mention

SECOND DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS VI—FLORAL.			
Mrs. R. W. Miller	Stockton	Best collection flowering plants in bloom	$10 00
Mrs. R. W. Miller	Stockton	Best collection ornamental foliage plants	$2 00
Mrs. R. S. Bates	Stockton	Best collection new and rare plants	$2 00
Mrs. R. S. Bates	Stockton	Best roses in bloom	$2 00
Miss H. B. Brush	Stockton	Best collection fuchsias in bloom	$2 00
Mrs. R. S. Bates	Stockton	Best display cut flowers	$2 00
Mrs. R. S. Bates	Stockton	Best display bouquets	$2 00
Miss H. B. Brush	Stockton	Best collect'n Australian plants	$2 00
Miss H. B. Brush	Stockton	Best collection of plants suitable for green house, conservatory, or window culture	$2 00
Mrs. R. S. Bates	Stockton	Best display hanging baskets with plants	$2 00
CULINARY.			
Made by Misses under 17 years of age.			
Miss Phoebe Brown	Stockton	Best fruit cake	$5 00
Miss Grace F. Hale	Stockton	Best sponge cake	$5 00
Miss M. Lyons	Stockton	Best corn bread	$5 00
Miss M. Lyons	Stockton	Best brown bread	$5 00
Miss Mamie Oldham	Stockton	Best wheat bread	$5 00
Miss Mamie Oldham	Stockton	Best plate biscuit	$5 00
Miss M. Lyons	Stockton	Best coffee cake	$2 50
Special premium offered by J. P. Spooner.			
Miss Grace F. Whale	Stockton	Best loaf of bread	$10 photographs
CLASS VII—MANUFACTURES.			
Miss H. B. Brush	Stockton	Best box confectionery	$5 00
John Bidwell	Chico	Best wheat flour	$5 00

THIRD DEPARTMENT.

AGRICULTURAL IMPLEMENTS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Grangers' Union	Stockton	Best thrashing machine	$10 00
Matterson & Williamson	Stockton	Best header "Stockton Chief"	$10 00
Grangers' Union	Stockton	Best reap'g, self-rak'g machine	$5 00
Grangers' Union	Stockton	Best reaping machine	$5 00
J. H. Coudit & Co.	Stockton	Best mowing machine	$5 00
H. C. Shaw Plow Co.	Stockton	Best steel plow	$3 00
Grangers' Union	Stockton	Best gang plow	$3 00
J. H. Coudit & Co.	Stockton	Best cast plow	$3 00
Grangers' Union	Stockton	Best grain sower	$5 00
Grangers' Union	Stockton	Best harrow	$3 00
H. C. Shaw Plow Co.	Stockton	Best horse rake	$3 00
W. A. Dorr	Stockton	Best seed drill	$3 00
Grangers' Union	Stockton	Best straw cutter	$3 00

THIRD DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
H. C. Shaw Plow Co.	Stockton	Best churn	$3 00
Grangers' Union	Stockton	Best large cultivator	$5 00
H. C. Shaw Plow Co.	Stockton	Best small cultivator	$3 00
J. C. Gage	Stockton	Best farm gate	$5 00
W. A. Dorr	Stockton	Best horse fork and apparatus	$5 00
Wright, Nash & Co.	Stockton	Best grain lifter	$3 00
F. S. Bayley	San Francisco	Best grain separator	$5 00
SWEEPSTAKES.			
Grangers' Union	Stockton	Best display agricult'l implm'ts	$10 00
A. Nouck	Stockton	Best windmill	$10 00
Daniel Houser	Stockton	Combined header and thrasher	Soc. Gold Medal
The most valuable labor-saving farm machine in California.			
Dr. C. Grattan	Stockton	Double gang plow	Diploma
A. F. Iashells	Biggs	Star cylinder and concave teeth	Diploma
CLASS II—WHEELWRIGHT WORK.			
M. P. Henderson	Stockton	Best display carriages	$10 00
H. C. Shaw Plow Co.	Stockton	Best two-horse wagon	$5 00
M. P. Henderson	Stockton	Best two-horse carriage	$5 00
M. P. Henderson	Stockton	Best single top buggy	$7 50
M. P. Henderson	Stockton	Best single open buggy	$5 00
M. P. Henderson	Stockton	Best buckboard	Special
Bailey, Badgeley & Co.	Stockton	Best six-horse farm wagon	Special prem
W. A. Dorr	Stockton	Best breaking carts	Special prem
Grangers' Union	Stockton	Best spring wagon	Special prem
CLASS III—HARNESS AND LEATHER.			
H. T. Dorrance	Stockton	Best disp. harness and saddlery	$10 00
I. S. Shippee	Stockton	Best set carriage harness	$5 00
H. T. Dorrance	Stockton	Best single harness	$5 00
H. T. Dorrance	Stockton	Best saddle	$5 00
H. T. Dorrance	Stockton	Best lady's saddle	$5 00
H. T. Dorrance	Stockton	Best bridle and saddle	$5 00
CLASS IV—MACHINERY AND BLACKSMITH WORK.			
W. A. Dorr	Stockton	Best steam engine	$15 00
Grangers' Union	Stockton	Best steam engine	Rec'd 2d prem
CLASS VI—CABINET WARE.			
T. S. Clark & Son	San Francisco	Best patent spring bed	$5 00
A. Easton	Stockton	Best center table	$3 00
A. Easton	Stockton	Best set parlor furniture	$5 00
A. Easton	Stockton	Best sick chair or couch	$3 00
CLASS VII—MISCELLANEOUS.			
T. S. Clark & Son	San Francisco	Best display mattresses	$3 00
A. Easton	Stockton	Best display upholstery	$5 00
A. Easton	Stockton	Best display carpets and oil cloth	$5 00
Lathrop & Noble	Stockton	Best display hats and caps	$5 00
Westlake Stove Company	Stockton	Best display tin ware	$5 00
Westlake Stove Company	Stockton	Best display stoves	$5 00
Henry Adams	Stockton	Display gas stoves	Special prem
Silk Culture.			
Ladies' Silk Cultivating Association of California	San Francisco	Best display silk cocoons	$8 00
Ladies' Silk Cultivating Association of California	San Francisco	Best display reeled silk	$8 00
Ladies' Silk Cultivating Association of California	San Francisco	Best disp. domestic manf'd silk	$8 00
Mrs. Sarah Sellers	Antioch	Best reeled silk	Special prem

THIRD DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. C. E. Babb	San José	Best quarter pound cocoons	Special prem
Mrs. Julia Farnsworth	San José	Second best quarter lb. cocoons	Special prem
Mrs. E. J. Purrington	Sebastopol	Third best quarter lb. cocoons	Special prem
Mrs. T. Stoddard	Lodi	Exhibit cocoons	Special prem
Mrs. Sarah Sellers	Antioch	Gen'l exhibit cocoons, eggs, etc.	Special prem
Dr. Hess	Alameda	Best silkworm eggs	Special prem
CLASS VIII—EMBROIDERY AND NEEDLEWORK.			
Mrs. A. A. Fogg	Stockton	Best single piece chenille work	$2 00
Eugenie Excoffier	San Francisco	Best hand-made handkerchief	$2 00
Eugenie Excoffier	San Francisco	Best tatting	$1 50
Eugenie Excoffier	San Francisco	Best toilet set	$2 00
Eugenie Excoffier	San Francisco	Best single piece hemstitching	$1 50
Mrs. S. S. Upstone	Stockton	Best kensington work on worsted	$2 00
Mrs. M. P. Henderson	Stockton	Best single door rug	$2 00
Mrs. Geo. A. McKenzie	Stockton	Best window lambrequin	$2 00
Mrs. Geo. A. McKenzie	Stockton	Best mantel lambrequin	$2 00
Mrs. Geo. A. McKenzie	Stockton	Best knitting-work of exhibitor	$2 00
Mrs. Geo. A. McKenzie	Stockton	Best mohair crochet work	$2 00
Mrs. Geo. A. McKenzie	Stockton	Best hand-made table cover	$2 00
Mrs. Geo. A. McKenzie	Stockton	Best lamp mat	$2 00
Miss Maggie Andrews	Stockton	Best macrame work	$2 00
Miss Maggie Andrews	Stockton	Best tidy on linen	$2 00
Mrs. J. W. Hart	Stockton	Best crochet lamp mat	$2 00
Mrs. J. W. Hart	Stockton	Best hand-made woolen shawl	$2 00
Mrs. J. W. Hart	Stockton	Best baby's dress	$2 00
Mrs. J. W. Hart	Stockton	Best baby carriage afghan	$2 50
Mrs. F. M. Bugbee	Stockton	Best single piece crochet work	$2 00
Miss May Wallace	Stockton	Best sofa pillow	$2 50
Miss May Wallace	Stockton	Best tidy on cotton canvas	$2 00
Miss May Wallace	Stockton	Best piano cover	$2 00
Mrs. J. W. Hart	Stockton	Best single piece quilting	$2 00
Mrs. O. K. Downs	Stockton	Best netting	$1 50
Mrs. J. C. Reid	Stockton	Best gent's shirt	$2 00
Miss Bessie Reid	Stockton	Best pincushion	$2 00
Mrs. A. M. Rowe	Stockton	Best tidy on worsted	$2 00
Mrs. A. M. Rowe	Stockton	Best kensington work on satin	$2 00
Mrs. A. M. Rowe	Stockton	Best foot-rest	$2 50
Mrs. S. S. Upstone	Stockton	Best embroidered hosiery	$2 00
Mrs. J. W. Hart	Stockton	Silk patchwork comforter	$2 00
Mrs. E. E. Hood	Stockton	Best ottoman cover	$2 00
Mrs. E. E. Hood	Stockton	Best single piece worsted embroidery	$2 00
Mrs. E. E. Hood	Stockton	Best pair pillow shams	$2 00
Mrs. Jos. Hale	Stockton	Best braided mat	$2 00
Laura De F. Gordon	Lodi	Best rag mat	$2 00
Mrs. George A. McKenzie	Stockton	Macrame work	Special mention
Mrs. J. W. Hart	Stockton	Tidy on cotton canvas	Special mention
Mrs. E. E. Hood	Stockton	Best single piece silk embroidery on wool	$2 00
Mrs. F. M. Bugbee	Stockton	Silk embroidery on wool	Special mention
Mrs. F. M. Bugbee	Stockton	Chenille work	Special mention
Mrs. F. M. Bugbee	Stockton	Window lambrequin	Special mention
Miss May Wallace	Stockton	Kensington work on satin	Special mention
CLASS IX—BURR, BEAD, AND MOSS WORK.			
Mrs. A. A. Fogg	Stockton	Best wax flowers	$2 00
Eugenie Excoffier	San Francisco	Best braid work of any kind	$2 00
Mrs. F. M. Bugbee	Stockton	Best single piece bead work	$1 00
Mrs. A. A. Fogg	Stockton	Best wax fruits	$2 00
Mrs. Jos. Hale	Stockton	Best arranged bouquet grasses	$1 50
Mrs. Jos. Hale	Stockton	Best single piece shell work	$1 50
Mrs. Jos. Hale	Stockton	Best arranged Autumn leaves	$1 50
Mrs. Jos. Hale	Stockton	Best specimen flower work	$1 50
Mrs. Jos. Hale	Stockton	Best specimen sea mosses	$1 50

THIRD DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS X—DISPLAYS.			
Mrs. F. M. Bugbee	Stockton	Best display hand made lace	$2 00
Miss Annie Briedenbach	Stockton	Best display crochet work	$4 00
Mrs. I. R. Wilbur	Stockton	Best display drawn fancy rag rugs	$3 00
Mrs. A. A. Fogg	Stockton	Best display embroidery	$3 00
Mrs. F. M. Bugbee	Stockton	Best display bead work	$2 00
Mrs. F. M. Bugbee	Stockton	Best variety needlework	$5 00
Mrs. O. K. Downs	Stockton	Best display needlework	$5 00
Mrs. L. M. Fairbanks	Stockton	Best display wreaths	$4 00
Miss Bessie Reid	Stockton	Best calico dress for lady over 18	$10 00
Miss Lulu Reid	Stockton	Best cal. dress for miss under 16	$5 00
Miss Lulu Cook	Stockton	Calico dress	Special mention
CLASS XI—SWEEPSTAKES.			
H. G. Boissilier	Stockton	Best and purest yeast powder	Diploma

FOURTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
ENCOURAGEMENT OF YOUNG PEOPLE.			
Miss Hattie L. Andrews	Stockton	Best knitting	$1 00
Miss Irene Bailey	Stockton	Best crochet work	$2 00
Miss Laura Freeman	Stockton	Best piece worsted embroidery	$2 00
Miss Lulu Reid	Stockton	Best exhibit plain sewing	$3 00
PREMIUMS FOR PUPILS OF THE PUBLIC SCHOOLS.			
Geoffry T. Smith	Stockton	Best animal drawing in crayon	$3 00
Geoffry T. Smith	Stockton	Best map drawing	$3 00
Miss Lizzie W. Hale	Stockton	Best written composition or poem	$3 00

FIFTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—FINE ARTS.			
Mrs. S. S. Upstone	Stockton	Best painting on satin	$3 00
Mrs. S. S. Upstone	Stockton	Best display flower painting	$3 00
Mrs. S. S. Upstone	Stockton	Best painting on china	$3 00
Mrs. S. S. Upstone	Stockton	Best specimen fruit painting	$3 00
E. B. Stowe	Stockton	Best exhibition penmanship	$3 00
Miss Maggie Andrews	Stockton	Best ivorytype	$3 00
Miss Ada A. Boggs	Stockton	Best display plaque painting	$3 00
H. W. McDonald	Stockton	Best specimen painting	$3 00
Miss Ada A. Boggs	Stockton	Best painting on velvet	$3 00
Miss Ada A. Boggs	Stockton	Best display painting, work of exhibitor	$3 00
J. M. Ladd	Stockton	Best exhibition landscapes in oil	$5 00
Miss Carrie Parsons	Stockton	Best display panel painting	$3 00
Julius Mersfelder	San Francisco	Best exhibition portraits in oil	$5 00

FIFTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
H. W. McDonald	Stockton	Best exhibition crayon drawing	$3 00
J. M. Ladd	Stockton	Best specimen landscapes in oil	$3 00
Mrs. S. S. Upstone	Stockton	Best pen drawing	$3 00
E. F. Sanders & Co.	Stockton	Best exhibition lithographs	$3 00
E. F. Sanders & Co.	Stockton	Best exhibition steel engrav'gs	$3 00

SPECIAL LIST.

The Committees on Special Entries report as follows:

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
A. F. Lashells	Biggs	Star cylinder and concave teeth for separators	Diploma
C. F. Tranley	San Francisco	Wall paper signs	Diploma
L. M. Bowdoin	Stockton	Rotary top kitchen table	Diploma
Continental Oil and Transportation Co.	Stockton	Illuminating oils	Diploma
Schofield & Tevis	San Francisco	Omaha white lead	Medal
Buhach Producing and Manufacturing Co.	Stockton	Buhach and insufflators	Medal
Richard Wheeler	Sacramento	Patent cannery	Diploma
H. T. Dorrance	Stockton	Horse collars	Diploma
Miss Ada Goodell	Stockton	Alphabet on canvas	Special mention
H. W. McDonald	Stockton	Water color portraits	Special mention
H. W. McDonald	Stockton	Portrait of Governor Perkins in India ink	Diploma
McGregor Bros.	Sacramento	One dozen watermelons	Special mention
M. H. Bond	Stockton	Funeral furniture and dried flowers	Medal
Julius Mersfelder	San Francisco	Sketches in water colors, oil, and pencil	Special mention
Mrs. D. C. Matteson	Stockton	Aquarium	Special mention
Chas. E. Owen	Stockton	Sheet music, books, and musical instruments	Special mention
G. C. Holman	Lockeford	Two sacks potatoes	Special mention
Mrs. I. A. Reid	Stockton	Toilet articles	Special mention
T. S. Clark & Son	San Francisco	Patent hospital beds	Special mention
T. S. Clark & Son	San Francisco	Patent wire coiling machine	Special mention
T. S. Clark & Son	San Francisco	Patent hotel couch	Special mention
W. S. Smith	Stockton	Fine large squashes	Special mention
A. Easton	Stockton	Furniture, etc.	Special mention
G. Norton	Stockton	Golden Gate washer	Special mention
Robert and Lucille Baldwin	Stockton	Case birds' eggs	Special mention
Mrs. J. M. Goodell	Stockton	Sunflowers and pampas grass	Special mention
Miss Laura Freeman	Stockton	Mammoth sunflowers	Special mention
Kennedy & Miller	Stockton	Duplex galvanic belt	Special mention
McGregor Bros.	Sacramento	One half dozen cucumbers	Special mention
M. P. Henderson	Stockton	Finished unpainted buggy	Special mention
Henry E. Adams	Stockton	Cook's tree protectors	Special mention
E. F. Sanders & Co.	Stockton	Picture frames and brackets	Special mention
L. A. Reister	Chico	Side saddles	Special mention
B. F. Wellington	San Francisco	Perfect hatcher incubator	Special mention
B. F. Wellington	San Francisco	Improved egg food	Special mention
B. F. Wellington	San Francisco	Hand shears	Special mention
B. F. Wellington	San Francisco	Boss cog pruner	Special mention
B. F. Wellington	San Francisco	High pruning shears	Special mention
B. F. Wellington	San Francisco	President lawn mowers	Special mention
Wilmerding & Co.	San Francisco	Peruvian bitters	Special mention
G. C. Holman	Lockeford	Corn and squashes	Special mention

SPEED PROGRAMME.

TUESDAY, SEPTEMBER 19TH, 1882.

RACE NO. 1—RUNNING.

For three-year-olds and over, owned in the district. One mile heats, best two in three. Purse, five hundred dollars. First horse, two hundred and fifty dollars; second horse, one hundred and twenty-five dollars; third horse, seventy-five dollars; fourth horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Minnie Belle, by Joe Daniels	J. A. Shepherd	Lathrop
Picnic, by Joe Daniels	John Miller	Stockton
Bird Catcher, by Specter	Col. C. Dorsey	Oak Dale
Sam Stevison, by Thad Stevens	Wm. McMurray	Visalia
Lady Partisan, by Partisan	A. Miller	Stockton
Jack Douglass, by Wildidle	Jack Douglass	Stockton
Joe Daniels, Jr., by Joe Daniels	J. N. Randall	Turlock

	Position at Starting.	*Position at Close.*	
1.	Minnie Belle	Sam Stevison	1
2.	Picnic	Jack Douglass	2
3.	Bird Catcher	Bird Catcher	3
4.	Sam Stevison	Joe Daniels, Jr.	4
5.	Lady Partisan	Minnie Belle	5
6.	Jack Douglass	Picnic	6
7.	Joe Daniels, Jr.	Lady Partisan	dis.

Time—1:45; 1:45½.

RACE NO. 2—TROTTING.

Purse, one thousand dollars, and two hundred dollars added if more than ten entries. For all horses owned on the Pacific Coast that have never beaten 2:36. One mile heats, best three in five. First horse, six hundred dollars; second horse, three hundred dollars; third horse, one hundred and eighty dollars; fourth horse, one hundred and twenty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Frank Mosco, by Frank Mosco	A. B. Cooper	Alameda
Big Lize, by ———	W. H. Henderson	San José
Vanderlynn, by Geo. M. Patchen	Patrick Farrell	San Francisco
Marion, by Nutwood	C. Van Buren	Mayfield

	Position at Starting.	*Position at Close.*	
1.	Frank Mosco	Vanderlynn	1
2.	Big Lize	Marion	2
3.	Vanderlynn	Frank Mosco	3
4.	Marion	Big Lize	dis.

Time—2:22; 2:25½; 2:28; 2:26½.

RACE No. 3—TROTTING.

Purse, three hundred dollars. For all yearlings owned in the district. One mile heat. First horse, one hundred and fifty dollars; second horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Sister to Honesty, by Priam	L. U. Shippee	Stockton
Mount Vernon, by Nutwood	Jas. McCloud	Stockton

Position at Starting.	*Position at Close.*
1. Sister to Honesty	Sister to Honesty 1
2. Mount Vernon	Mount Vernon 2

Time—3:03.

WEDNESDAY, SEPTEMBER 20TH, 1882.

RACE No. 4—RUNNING.

Purse, four hundred dollars. For all two-year-olds owned in the district. One mile heat. First horse, two hundred dollars; second horse, one hundred dollars; third horse, sixty dollars; fourth horse, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Certiorari, by Joe Daniels	G. W. Trahern	Stockton
Bryant W., by Monday	T. H. Williams, Jr.	Undine
Lara, by Joe Daniels	D. S. Terry	Stockton
Gracie Mahon, by Modoc	Jas. F. Mahon	Stockton

Position at Starting.	*Position at Close.*
1. Certiorari	Certiorari 1
2. Bryant W.	Lara 2
3. Lara	Bryant W. 3
4. Gracie Mahon	Gracie Mahon 4

Time—1:48.

RACE No. 5—TROTTING.

Purse, one thousand dollars, and two hundred dollars added if more than ten entries. For all horses owned on the Pacific Coast that have never beaten 2:25. Mile heats, best three in five. First horse, five hundred dollars; second horse, two hundred and fifty dollars; third horse, one hundred and fifty dollars; fourth horse, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Cairo, by Chieftain	John Hughes	San Francisco
Starr King, by George M. Patchen	Charles W. Welby	San Francisco
Director, by Dictator	John A. Goldsmith	Oakland
Echora, by Echo	L. H. Titus	Oakland
Honesty, by Priam	J. H. Dodge	Stockton

Position at Starting.	*Position at Close.*
1. Cairo	Director 1
2. Starr King	Starr King 2
3. Director	Echora 3
4. Echora	Honesty 4
5. Honesty	Cairo 5

Time—2:23½; 2:23¾; 2:23¾; 2:25½; 2:26.

RACE NO. 6—TROTTING.

Purse, three hundred dollars. For district trotting. Named horses. Mile heats, best three in five. First horse, one hundred and fifty dollars; second horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Silverthread, by The Moor	W. H. Parker	Stockton
John Patchen, by Inauguration	John Williams	Stockton

Position at Starting.	*Position at Close.*	
1. Silverthread	John Patchen	1
2. John Patchen	Silverthread	2

Time—2:45½; 2:43; 2:46; 2:40½; 2:40¾.

THURSDAY, SEPTEMBER 21ST, 1882.

RACE NO. 7—RUNNING.

Purse, five hundred dollars; and if 1:43 is beaten, the horse making the lowest record will receive two hundred dollars additional. For all horses on the Pacific Coast. One mile and repeat. First horse, two hundred and fifty dollars; second horse, one hundred and twenty-five dollars; third horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jim Douglass, by Wildidle	George Deusdale	Sacramento
Inauguration, by Wildidle	Wm. Boots	Milpitas
May D., by Wildidle	W. L. Appleby	Santa Clara

Position at Starting.	*Position at Close.*	
1. Jim Douglass	May D.	1
2. Inauguration	Jim Douglass	2
3. May D.	Inauguration	3

Time—1:44; 1:44¾.

RACE NO. 8—TROTTING.

Purse, eight hundred dollars. For all two-year-olds owned in the district. Mile heats, best two in three. First horse, four hundred dollars; second horse, two hundred dollars; third horse, one hundred and twenty dollars; fourth horse, eighty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Baby Mine, by Nephew	G. W. Trahern	Stockton
Magdalene, by Peerless	D. Visher	Stockton
Alpheus, by Mambrino Wilkes	J. W. Warren	Linden
Almoone, by Algona	H. Robison	Lemoore

Position at Starting.	*Position at Close.*	
1. Baby Mine	Magdalene	1
2. Magdalene	Alpheus	2
3. Alpheus	Almoone	3
4. Almoone	Baby Mine	4

Time—2:45; 2:43.

RACE NO. 9—TROTTING.

Special purse for named horses. Purse, three hundred dollars. Mile heats, best three in five. First, second, and third horses, one hundred dollars each.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ashley, by Plumas	J. Cochran	Chico
Frank Mosco, by Frank Mosco	A. B. Cooper	Alameda
Tump Winston (formerly Kent), by Primas	E. Downer	Sacramento

Position at Starting.		*Position at Close.*	
1.	Ashley	Tump Winston	1
2.	Frank Mosco	Frank Mosco	2
3.	Tump Winston	Ashley	3

Time—2:26¾; 2:27; 2:30½; 2:30½.

FRIDAY, SEPTEMBER 22D, 1882.

RACE NO. 10—RUNNING.

For all horses on the Pacific Coast. Two miles and repeat. Purse, eight hundred dollars. First horse, four hundred dollars; second horse, two hundred dollars; third horse, one hundred and twenty dollars; fourth horse, eighty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jack Douglass, by Wildidle	Jack Douglass	Stockton
Mollie H., by Wildidle	Wm. Boots	Milpitas
Night Hawk, by imported Haddington	P. J. Shafter	San Francisco
Patrol, by Wildidle	W. L. Appleby	Santa Clara

Position at Starting.		*Position at Close.*	
1.	Jack Douglass	Night Hawk	1
2.	Mollie H.	Jack Douglass	2
3.	Night Hawk	Patrol	3
4.	Patrol	Mollie H.	dis

RACE NO. 11—RUNNING.

For all three-year-olds owned in the district. One mile heats, best two in three. Purse, eight hundred dollars. First horse, four hundred dollars; second horse, two hundred dollars; third horse, one hundred and twenty dollars; fourth horse, eighty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Bird Catcher, by Specter	Col. C. Dorsey	Oak Dale
Kate Carson, by Joe Daniels	G. W. Trahern	Stockton
Minnie Belle, by Joe Daniels	J. A. Shepherd	Lathrop
Reel Terry, by California	W. L. Ashe	Turlock

Position at Starting.		*Position at Close.*	
1.	Bird Catcher	Bird Catcher	1
2.	Kate Carson	Minnie Belle	2
3.	Minne Belle	Kate Carson	3
4.	Reel Terry	Reel Terry	dis

Time—1:45; 1:49¼.

RACE NO. 12—TROTTING.

For all horses owned on the Pacific Coast that have never beaten 2:22. Mile heats, best three in five. Purse, fifteen hundred dollars. First horse, seven hundred and fifty dollars; second horse, three hundred and seventy-five dollars; third horse, two hundred and twenty-five dollars; fourth horse, one hundred and fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Starr King, by Geo. M. Patchen	Chas. W. Welby	San Francisco
Brigadier, by Happy Medium	J. B. McDonald	Marysville
Romero, by Richmond	J. A. Goldsmith	Oakland

Position at Startiug.	*Position at Close.*	
1. Starr King	Romero	1
2. Brigadier	Brigadier	2
3. Romero	Starr King	3

Time—2:20; 2:19½; 2:22.

SATURDAY, SEPTEMBER 23D, 1882.

RACE NO. 13—TROTTING.

For all horses owned on the Pacific Coast that have never beaten 2:28. Mile heats, best three in five. Purse, one thousand dollars. First horse, five hundred dollars; second horse, two hundred and fifty dollars; third horse, one hundred and fifty dollars; fourth horse, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Albert W., by Electioneer	A. Waldstein	San Francisco
Sweetness, by Volunteer	J. A. Goldsmith	Oakland
Nellie R., by General McClellan, Jr.	S. Sperry	Santa Rosa

Position at Starting.	*Position at Close.*	
1. Albert W.	Albert W.	1
2. Sweetness	Nellie R.	2
3. Nellie R.	Sweetness	3

Time—2:22¼; 2:20; 2:22; 2:22½; 2:24.

RACE NO. 14—PACING.

For all horses on the Pacific Coast that have never beaten 2:25. Mile heats, best three in five. Purse, four hundred dollars. First horse, two hundred dollars; second horse, one hundred dollars; third horse, sixty dollars; fourth horse, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lady Hays, by Hiram Tracy	E. S. Dennison	Oakland
Oakland Boy, by Winthrop	A. L. Hinds	Oakland
Colonel Dickey, by Kentucky Hunter	T. J. Young	Modesto
Ouida, by Black Hawk	G. Valensin	Hicksville

Position at Starting.	*Position at Close.*	
1. Lady Hays	Ouida	1
2. Oakland Boy	Colonel Dickey	2
3. Colonel Dickey	Oakland Boy	3
4. Ouida	Lady Hays	dis

Time—2:35; 2:29; 2:30¾; 2:32; 2:31; 2:29½.

TRANSACTIONS

OF THE

THIRD DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of Sutter, Yuba, Butte, Colusa, Sacramento,
Tehama, and Yolo.

OFFICERS OF THE ASSOCIATION.

C. C. MASON	President
J. H. KRAUSE	Secretary
CHARLES FAULKNER	Treasurer

DIRECTORS.

H. C. WILSON	Tehama County
A. B. COLLINS	Chico, Butte County
H. M. BERNARD	Sacramento, Sacramento County
WILLIAM HAWKINS	Chico, Butte County
N. D. RIDEOUT	Marysville, Yuba County
J. W. B. MONTGOMERY	Cana, Butte County
L. H. McINTOSH	Nord, Butte County
C. C. MASON	Chico, Butte County

REPORT.

CHICO, December 1, 1882.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Third District Agricultural Association submit this their report of the transactions of said Association, for the year ending this date.

J. H. KRAUSE, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Old balance 1881, as per report	$ 95 91	
Received from park	901 00	
Received from pavilion	842 50	
Received from bank of Butte County (loan)	100 00	
Received from State appropriation	1,500 00	
Received from entrance money—horses	500 00	
Received from subscriptions	903 00	
Received from advertisements in premium book	147 50	
Received from ice cream stand	20 00	
Received from race No. 1, second money returned	105 00	
Received from Directors to balance account	26 30	
		$5,141 21

Expenditures.

Amount paid National Trotting Association	$ 52 00	
Bills of 1881	79 12	
Expenses of office	363 05	
Expenses at park	382 53	
Expenses of pavilion	183 92	
Printing	198 96	
Bank of Butte County (loan)	100 00	
Interest	4 13	
Music	65 00	
Ladies' tournament	97 50	
Rent of pavilion	250 00	
Amount paid in purses	2,325 00	
Amount paid in premiums	1,040 00	
		$5,141 21

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—THOROUGHBREDS.				
Best stallion, three years old and over	W. L. Sullivan	Sacramento	Jim Brown	$20 00
Best mare, three years old and over	J. Q. Anderson	Stockton	Minnie Bell	$15 00
Second best	A. J. Stemler	Sacramento	Lady Partisan	$3 00
CLASS II—GRADED HORSES.				
Best stallion, three years old and over	J. J. Reaves	Chico	Blackbird	$15 00
Best stallion, two years old	J. J. Reaves	Chico	William B.	$7 50
Best stallion, one year old	James Hasty	Chico	Cal. Chief	$5 00
Best stallion, with family of five colts	J. T. McIntosh	Chico	Singleton	$15 00
Best mare, three years old and over	Ben. True	Chico	Nellie	$10 00
Second best	D. Snyder	Chico	Lady Toleman	$3 00
Best mare, two years old	J. J. Reaves	Chico	Belle Howard	$7 50
Best mare, one year old	J. T. McIntosh	Chico	Sallie M.	$5 00
Second best	J. J. Reaves	Chico	Lady Hilda	$1 00
CLASS III—HORSES OF ALL WORK.				
Best stallion, three years old and over	T. Garrett	Chico	Chief	$10 00
Second best	J. Crabtree	Chico	Sir Tom	$3 00
Best stallion, two years old	Al. Cross	Chico	Cub	$5 00
Best mare, three years old and over	J. J. Reaves	Chico	Lancet	$7 50
Second best	Al. Cross	Chico	Beck	$2 50
Best mare, two years old	D. Snyder	Chico	Nellie	$5 00
CLASS IV—DRAFT HORSES.				
Best stallion, three years old and over	J. C. Hess	Chico	Napoleon	$10 00
Best stallion, two years old	J. W. Hedge	Chico	Black Tom	$5 00

CLASS V—ROADSTERS.				
Best gelding, four years old and over	C. Sherman	Chico	Carlisle	$7 50
Second best	Shorty	Chico	Roanoke	$2 00
Best gelding, three years old	Carnell	Colusa County	Telegraph	$5 00
Best gelding, two years old	L. H. McIntosh	Colusa County	Prince	$3 00
Second best	L. D. Jenkins	Chico	Rockwell	$1 00
Best stallion, three years old and over	J. T. McIntosh	Chico	Singleton	$10 00
Best mare, three years old and over	James Hasty	Chico	Blue Bell	$10 00
Second best	D. M. Hooper	Chico	Rodie Ann	$3 00
Best mare, two years old	Charles Sherman	Chico	Bell Kimball	$7 50
Second best	J. T. McIntosh	Chico	Exact	$2 00
CLASS VI—CARRIAGE HORSES, DOUBLE AND SINGLE.				
Best carriage horses	Allen Henry	Chico	Don and Joe	$3 00
Best single carriage horse	W. A. Tetrean	Chico	Polly	$7 50
CLASS VII—ROADSTER TEAMS.				
Best double team	A. Bullard	Chico	Dan and Heitzig	$10 00
Second best	H. Bay	Chico	Cloud and Nig	$3 00
CLASS VIII—SADDLE HORSES.				
Best saddle horse	J. Burk	Chico	Jennie	$5 00
CLASS IX—COLTS.				
Best yearling horse colt	James Hasty	Chico	Chico	$7 50
Second best	J. W. Fritter	Chico	Orphan Boy	$2 00
Best suckling colt	J. T. McIntosh	Chico	Signate	$5 00
Second best	Ben. True	Chico	Ben T.	$1 00
Best yearling mare colt	J. T. McIntosh	Chico	Sallie M.	$5 00
Second best	Chas. Sherman	Chico		$5 00
Best suckling mare colt	J. J. Reaves	Chico	Chico Maid	$1 00
Second best	J. T. McIntosh	Chico	Soltair	$1 00
CLASS X—SWEEPSTAKES.				
Best stallion of any age	J. J. Reaves	Chico	Blackbird	$25 00
Best mare of any age	J. T. McIntosh	Chico	Exact	$25 00
CLASS XI—JACKS.				
Best jack, two years old and over	A. B. Collins	Chico	Prince	$10 00
Second best	J. J. Reaves	Chico	Humboldt	$3 00
Best jack, one year old suckling	A. B. Collins	Chico	Jack	$5 00
Best lot of jennies	A. B. Collins	Chico		$6 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—DURHAM CATTLE.				
Best bull, three years old and over	J. J. Reaves	Chico	Twilight	$15 00
Second best	M. Wicks	Oroville	Major Butler	$4 00
Best bull, one year old	J. J. Reaves	Chico	Henry Clay	$7 50
Second best	M. Wicks	Oroville	Louan	$2 00
Best bull calf	M. Wicks	Oroville	Dexter	$5 00
Second best	J. J. Reaves	Chico	Stonewall	$1 00
Best cow, three years old and over	M. Wicks	Oroville	Frantic Louan	$15 00
Second best	J. J. Reaves	Chico	Sallie Short, Jr.	$4 00
Best cow, two years old	J. J. Reaves	Chico	Queen Victoria	$10 00
Second best	M. Wicks	Oroville	Frantic 24th	$3 00
Best cow, one year old	J. J. Reaves	Chico	Beauty	$7 50
Best heifer calf	M. Wicks	Oroville	Matilda	$5 00
Best herd, one male and four females	J. J. Reaves	Chico	----	$20 00
DEVONS.				
Best bull, three years old and over	R. McEnespy	Chico	Ben Butler	$15 00
Best cow, three years old and over	R. McEnespy	Chico	Mayflower	$15 00
Second best	R. McEnespy	Chico	Queen	$4 00
Best cow, two years old	R. McEnespy	Chico	Maud	$10 00
Best cow, one year old	R. McEnespy	Chico	Spry	$7 50
Best heifer calf	R. McEnespy	Chico	Trixey	$5 00
JERSEYS.				
Best bull, two years old and over	A. B. Collins	Chico	Colonel Hawkins	$10 00
Best cow, three years old and over	G. F. Hawkins	Chico	Roxanna	$15 00
Second best	G. F. Hawkins	Chico	Duchess	$4 00
Best cow, two years old	A. B. Collins	Chico	Maud	$10 00
Second best	A. B. Collins	Chico	Blackeye	$3 00
Best cow, one year old	G. F. Hawkins	Chico	Bessie	$7 50
Best heifer calf	A. B. Collins	Chico	Flora Bell	$5 00
CLASS II—GRADED CATTLE.				
Best cow, three years old and over	A. B. Collins	Chico	Nellie A.	$10 00
Second best	A. B. Collins	Chico	Bridget	$3 00
CLASS III—SWINE.				
Best China boar	M. Wicks	Oroville	Gabriel	$8 00

Best China sow	M. Wicks	Oroville	Betty	$5 00
Best and fattest hog	J. W. Paden	Chico	Silvani	$5 00
Best five pigs, under six months old	C. Sherman	Chico		$5 00
CLASS II—ANGORA GOATS.				
Best buck	M. Wicks	Oroville	Jack	$10 00
Second best	M. Wicks	Oroville	Jarard	$3 00
Best doe	M. Wicks	Oroville	Lizzie	$10 00
Second best	M. Wicks	Oroville	Jennie	$3 00
Best four kids	M. Wicks	Oroville		$5 00
CLASS IV—POULTRY.				
Best five varieties	A. B. Collins	Chico		$10 00
Best trio Silkies	Matilda J. Clark	Nelson		$2 50
Best trio light Brahmas	A. B. Collins	Chico		$2 50
Best trio Dominiques	M. Goree	Chico		$2 50
Best trio Black Cochins	A. B. Collins	Chico		$2 50
Best trio Plymouth Rocks	A. B. Collins	Chico		$2 50
Best trio Buff Cochins	Matilda J. Clark	Nelson		$2 50
Best trio White Cochins	Matilda J. Clark	Nelson		$2 50
Best Brahma cock	Matilda J. Clark	Nelson		$2 00
Best game cock	A. B. Collins	Chico		$2 00
Best pair Bronze turkeys	Willie Ried	Chico		$2 00
Best turkey gobbler	Wm. Cleveland	Chico		$2 50
Best pair Pekin ducks	B. F. Allen	Chico		$2 50
Best pair Muscovy ducks	Charles Henry	Chico		$2 00
Best pair China geese	Charles Henry	Chico		$2 00

SECOND DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—AGRICULTURAL MACHINES, ETC.			
M. L. Mery	Chico	Farm and feed mill	Diploma
J. M. Ormsby	Chico	Sewing machines	Diploma
Hubbard & Earll	Chico	Display of harvesting tools	$10 00
Hubbard & Earll	Chico	Best well pump	$2 00
Hubbard & Earll	Chico	Best gang plow	$5 00

THIRD DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—TEXTILE FABRICS.			
Mrs. C. C. Goree	Chico	Best stocking yarn	$2 00
Mrs. C. C. Schoonover	Chico	Best ten yards of carpet	$4 00
Mrs. J. E. Walker	Chico	Second best	$2 50
Mrs. Winders	Chico	Best hooked rug	$3 00
Mrs. Stump	Chico	Best collection of rugs	$2 00
Mrs. J. H. Guill	Chico	Best knit cotton stockings	$1 00
Mrs. C. C. Goree	Chico	Best knit wool stockings	$1 00
Mrs. C. C. Schoonover	Chico	Best wool socks	$1 00
P. Peters & Bro.	Chico	Best display of drygoods	$20 00
Mrs. G. F. Jones	Chico	Best display of fancy goods	$15 00
Mrs. G. F. Jones	Chico	Best knit rug	Hon. mention
Mrs. J. Philips	Chico	Best ottoman cover	$2 00
Miss Dora Chandler	Chico	Fancy chair cushion and back	$2 00
Mrs. G. F. Jones	Chico	Crochet shawl	$2 00
Mrs. A. F. Eitel	Chico	Lamp stand mat	$1 00
Mrs. G. F. Jones	Chico	Silk embroidery	$2 00
Mrs. W. H. Earll	Chico	Ornamental needlework	$2 00
Miss F. J. Decker	Chico	Embroidered sofa cushion	$2 00
Mrs. A. C. Broyles	Chico	Embroidered handkerchief	$1 00
Mrs. A. M. Barley	Chico	Chenille work	Hon. mention
Miss Carrie Burroughs	Chico	Lace handkerchief	$2 00
Mrs. J. M. Ormsby	Chico	Best bead embroidery	$2 00
Mrs. Wm. Estee	Chico	Embroidered pillow shams	$2 00
Mrs. J. Philips	Chico	Worsted work	$2 00
Mrs. A. F. Eitel	Chico	Cardboard work	Hon. mention
Miss Decker	Chico	Display of tidies	Hon. mention
Miss Decker	Chico	Embroidery on canvas	$2 00
Mrs. E. A. Warren	Chico	Tufted cushion	$2 00
Miss Sarah F. Sorensen	Chico	Display of feather work	$3 00
Mrs. Albert Jones	Oroville	Best feather-edge braid	$2 00
Mrs. W. G. Mosher	Chico	Satin bonnet, velvet braid	Diploma and $5
Mrs. W. G. Mosher	Chico	Velvet hat, display of	Diploma and $5
Mrs. W. G. Mosher	Chico	Feathers and artificial flowers	Diploma and $5
Mrs. A. C. Broyles	Chico	Variety of linen embroidery	$2 50
Mrs. A. F. Jones	Chico	Specimen of wax flowers	Hon. mention
Mrs. Mickey	Chico	Moss and lichen work	$2 00
Mrs. A. F. Jones	Chico	Cone work	Hon. mention
Mrs. A. F. Jones	Chico	Leaf work	$1 00
Mrs. A. F. Jones	Chico	Shell work	Hon. mention
Mrs. J. A. Hill	Chico	Specimen of braid work	$2 00
Miss Gussie Jansen	Chico	Embroidered picture	$2 50
Mrs. S. J. Barkley	Chico	Silk quilt	$3 00
Mrs. Reister	Chico	Patchwork quilt	$3 00
Mrs. Hooper	Chico	Afghan	$2 00
Mrs. A. C. Broyles	Chico	Best embroidery	$2 00

THIRD DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. A. C. Broyles	Chico	Outline embroidery	Hon. mention
Mrs. A. M. Barley	Chico	Lambrequin	$1 00
Miss Gussie Jansen	Chico	Fine lace work	Diploma and $3
Mrs. J. A. Hill	Chico	Toilet set	$2 00
Mrs. A. F. Eitel	Chico	Wax leaves	Diploma and $1
Mrs. J. J. Hassell	Chico	Hand-made dresses	$5 00
JUVENILE DEPARTMENT.			
Miss M. Goree	Chico	Best pair knit stockings	$1 00
Miss Lorine Stilson	Chico	Charm string	$1 00
Miss Alice Jones	Chico	Lambrequin	$1 00

FOURTH DEPARTMENT.

MECHANICAL PRODUCTS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—MANUFACTURES OF LEATHER.			
L. A. Reister	Chico	Two sets double carriage harness	$10 00
L. A. Reister	Chico	Four sets single harness	$5 00
L. A. Reister	Chico	Display of saddles and bridles	$2 50
CLASS II—WORKED METALS.			
Farrell & Co.	Chico	Display of tinware	Diploma
Farrell & Co.	Chico	Display of plumber's goods and wares	Diploma
Farrell & Co.	Chico	Exhibit of wire goods	$5 00
Hibbard & Sommers	Chico	Display of silverware	$5 00
Hubbard & Earll	Chico	Display of gas chandeliers	$5 00
Hubbard & Earll	Chico	Display of general hardware	$10 00
Hubbard & Earll	Chico	Display of mechanics' tools	$5 00
CLASS III—STOVES, CASTINGS, ETC.			
Farrell & Co.	Chico	Best oil stove	$5 00
Farrell & Co.	Chico	Best parlor stove	Diploma
Farrell & Co.	Chico	Best hollow ironware	Diploma
Farrell & Co.	Chico	Best gas and water pipes	Diploma
Farrell & Co.	Chico	Best assortment of bathing tubs	Diploma
Hubbard & Earll	Chico	Best cooking stove for wood	$5 00
Hubbard & Earll	Chico	Best cooking range	$5 00
CLASS IV—MUSICAL INSTRUMENTS.			
DeYoung & Riggs	San Francisco	Best display of musical instruments	$10 00
DeYoung & Riggs	San Francisco	Best piano made in United States	$5 00
DeYoung & Riggs	San Francisco	Best organ made in United States	$5 00
CLASS VII—SPORTING INSTRUMENTS, ETC.			
Farrell & Co.	Chico	Best double-barrel shotgun	$2 00
Farrell & Co.	Chico	Best sporting rifle	$2 00
Farrell & Co.	Chico	Best breach-loading shotgun	$2 00

Fourth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS VIII—CHEMICALS.			
Mrs. C. C. Goree	Chico	Best display of hand-made hard soap	$2 00
Mrs. J. H. Guill	Chico	Best display of hand-made soft soap	$2 00
CLASS IX—CANDY AND CONFECTIONERY.			
E. A. Warren	Chico	Best display of candies	$5 00
CLASS X—STONEWARE, TILES, GLASS, AND CROCKERY.			
	San Francisco	Burdock's patent refrigerator without ice	Diploma
J. F. Neuman	Chico	Stoneware and pipes	Diploma
William Proud	Chico	Ornithological display	$5 00

FIFTH DEPARTMENT.

AGRICULTURAL PRODUCTS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—FLOUR AND GRAIN.			
John Bidwell	Chico	Best of any variety of wheat	$5 00
Fred. Wakefield	Chico	Best sack of barley	$2 00
Hibbard & Shand	Chico	Best sack of flour	$3 00
CLASS II—VEGETABLES AND ROOTS.			
John Bidwell	Chico	Best half bushel sweet potatoes	$1 00
John Bidwell	Chico	Best six marrow squashes	Diploma
John Bidwell	Chico	Best six hubbard squashes	Diploma
John Bidwell	Chico	Best six crooked neck squashes	Diploma
John Bidwell	Chico	Largest pumpkin	Diploma
John Bidwell	Chico	Best three watermelons	Diploma
John Bidwell	Chico	Best three yellow neck melons	Diploma
John Bidwell	Chico	Best three muskmelons	Diploma
John Bidwell	Chico	Best half pk gherkin cucumbers	Diploma
John Bidwell	Chico	Best six turnip beets	Diploma
John Bidwell	Chico	Best six sugar beets	Diploma
John Bidwell	Chico	Best table of vegetables	$10 00
CLASS III—FLOWERS.			
Mrs. John Bidwell	Chico	Best col't'n ornamental foliage	$5 00
CLASS V—BUTTER, BREAD, ETC.			
J. H. Guill	Chico	Best display of butter in roll	$2 00
David Reid	Chico	Second best	$1 00
Miss Hattie Mandeville	Chico	Best wheat bread	$1 00
Miss Hattie Mandeville	Chico	Best brown bread	$1 00
Miss Hattie Mandeville	Chico	Best raised biscuits	$1 00
Mrs. J. E. Walker	Chico	Best soda biscuits	$1 00
Mrs. J. F. Fisher	Chico	Best salt raising bread	$1 00
Mrs. A. F. Eitel	Chico	Best corn bread	$1 00
Mrs. A. F. Eitel	Chico	Best yeast powder biscuit	$1 00

SIXTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—FRUITS, NUTS, ETC.			
C. W. Harris	Chico	Best display of apples	$5 00
John Bidwell	Chico	Second best	$2 50
J. H. Guill	Chico	Best twelve varieties	$5 00
J. H. Guill	Chico	Best display of pears	$5 00
John Bidwell	Chico	Second best	$2 50
C. W. Harris	Chico	Best three varieties	$1 00
C. W. Harris	Chico	Best display of peaches	$5 00
John Bidwell	Chico	Second best	$2 50
J. H. Guill	Chico	Best four varieties of plums	$2 00
John Bidwell	Chico	Second best	Diploma
Zion Moore	Chico	Best pomegranates	$3 00
John H. Guill	Chico	Best nectarines	$3 00
John Bidwell	Chico	Best figs	$2 00
C. W. Harris	Chico	Best oranges	$2 00
CLASS II—HONEY, PRESERVES, PICKLES, ETC.			
E. P. Stukey	Chico	Best exhibit of honey	$2 00
Mrs. J. E. Walker	Chico	Best three jars red currant jelly	$2 00
Mrs. R. Diller	Chico	Best assorted jellies	$2 00
Mrs. R. Diller	Chico	Best display of fruit in glass	$2 50
Mrs. Zion Moore	Chico	Best three jars raspberry jelly	$2 00
Mrs. Zion Moore	Chico	Best three jars blackberry jelly	$2 00
Miss Della Goodrich	Chico	Best display of preserves	$5 00
Mrs. Levi Smith	Chico	Second best	$3 00
Mrs. Levi Smith	Chico	Best display of pickles	$2 50
CLASS IV.			
John Bidwell	Chico	Best 25 pounds dried apples	$2 00
John Bidwell	Chico	Best 25 pounds dried peaches	$2 00
John Bidwell	Chico	Best 25 pounds dried pears	$2 00
John Bidwell	Chico	Best 25 pounds dried plums	$2 00
John Bidwell	Chico	Best 25 pounds dried apricots	$2 00
Chester Walker	Chico	Best 10 pounds dried figs	$2 00
J. H. Guill	Chico	Best dried berries	$2 50
J. H. Guill	Chico	Best ½ pk soft-shelled almonds	$2 00
John Bidwell	Chico	Best display of dried raisins	$2 50

SEVENTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—FINE ARTS.			
Mrs. F. A. Jones	Chico	Profile pictures	Hon. mention
Miss Emma Crew	Chico	Landscape paint'g, Cal. scenery	$5 00
Miss Emma Crew	Chico	Best oil painting on canvas	$10 00
Mrs. A. A. Hibbard	Chico	Screen, painted in oil on canvas	$10 00
J. F. Cole	Chico	Exhibit of penmanship	$2 00
D. H. Woods	Chico	Exhibit of photographs	Diploma
MISCELLANEOUS.			
G. W. Crapo	Chico	Group of frames, pocket knife work	Hon. men. & dip
G. W. Crapo	Chico	Display of frames	Diploma

Seventh Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
E. M. Allen	Chico	Picture frames, pocket knife work	Hon. men. & dip
Mrs. W. Earle	Chico	Child's dress, seventy years old	Hon. men. & dip
J. H. Guill	Chico	Improved churn	Diploma
J. W. Pettinger	Chico	Smith's patent churn	Diploma
J. H. Guill	Chico	Exhibit of hard wood	Diploma
Mrs. J. H. Guill	Chico	Home-made vinegar	$2 00
J. M. Ormsby	Chico	Case of velvet frames	Diploma
Mrs. S. T. Tuttle	Chico	Twenty-seven pieces made with hand fret saw	Diploma
Mrs. Jas. Peal	Chico	Fancy card basket	Hon. mention
A. L. Knowlton	Chico	Geological display	Hon. men. & dip
Chico Cannery	Chico	Lot of fruit in cans	Hon. men. & dip

LADIES' TOURNAMENT.

Name.	P. O. Address.	Award.
Miss Lena Horner	Chico	First prize, $30 00
Mrs. —— Tressey	Chico	Second prize, $20 00
Mrs. Nellie McCormack	Chico	Third prize, $15 00
Miss Annie Clark	Chico	Fourth prize, $10 00

MISSES' TOURNAMENT.

Name.	P. O. Address.	Award.
Miss Nellie Sherman	Chico	First prize, $10 00
Miss Lizzie Decker	Chico	Second prize, $5 00
Miss Minnie Williams	Chico	Third prize, $2 50
Miss Matilda Goree	Chico	Fourth prize, $2 50
Miss Eva Clark	Chico	Fifth prize, $2 50

SPEED PROGRAMME.

TUESDAY, SEPTEMBER 5TH, 1882.

RACE NO. 1—TROTTING.

Purse, three hundred and fifty dollars. One mile heats, best three in five, to harness and rule. First horse, two hundred and ten dollars; second horse, one hundred and five dollars; third horse, thirty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Tump Winston, formerly Kent, by Primus; dam, unknown	E. Downer	Sacramento
Carlisle, by Plumas; dam, unknown	Chas. Sherman	Chico
Slim Jim, by Tyler horse; dam, unknown	Chas. Shear	Sacramento

Position at Starting.	*Position at Close.*	
1. Carlisle	Tump Winston	1 1
2. Tump Winston	Carlisle	2 dis.
3. Slim Jim	Slim Jim	dis.

Time—2:43; 2:27.

WEDNESDAY, SEPTEMBER 6TH, 1882.

RACE NO. 2—RUNNING.

Purse, one hundred and twenty-five dollars. Free for all three-year-olds. Entrance, twenty-five dollars, p. p., one hundred and twenty-five dollars added. One mile dash.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maria F., by Leinster; dam, unknown	Geo. Hearst	San Francisco
Lady Partisan, by Partisan; dam, Jewell	A. Miller	Sacramento
Minnie Bell, by Joe Daniels; dam, by Norfolk	J. Q. Anderson	Stockton

Position at Starting.	*Position at Close.*	
1. Maria F.	Maria F.	1
2. Lady Partisan	Minnie Bell	2
3. Minnie Bell	Lady Partisan	3

Time—1:46½.

RACE NO. 3—RUNNING.

Free handicap. Stake, two hundred dollars. Entrance, fifty dollars. Forfeit, twenty-five dollars. Declaration, ten dollars, to be made September 1st. One and one-eighth mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred Hunter, by Norfolk; dam, by Lodi	Wm. Hunter (forfeit)	Colusa
Shiner, by Norfolk; dam, by Rifleman	Ab. Ellis	Colusa
Jubilee, by Norfolk; dam, by Lodi	Thos. Hazlette	Colusa
Jim Brown, by Foster; dam, unknown	Geo. Hearst	San Francisco
Bob Ingersoll; dam, unknown	F. M. Coltherp	Sacramento
Joe Howell, by Bonnie Scotland; dam, Ettie Shephard	Stemler & Ayres	Sacramento

Position at Starting.	*Position at Close.*	
1. Jubilee	Joe Howell	1
2. Joe Howell	Jim Brown	2
3. Shiner	Shiner	3
4. Bob Ingersoll	Jubilee	4
5. Jim Brown	Bob Ingersoll	5

Time—1:57½.

THURSDAY, SEPTEMBER 7TH, 1882.

RACE NO. 4—RUNNING.

Stake, three hundred dollars. Free for all three-year-olds. Entrance, fifty dollars. Forfeit, twenty-five dollars. Second horse to save stakes. One and one-half mile.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maria F., by Leinster	Sullivan	San Francisco
Lady Partisan, by Partisan	A. Miller	Sacramento
Minnie Bell, by Joe Daniels	J. Q. Anderson	Sacramento

Position at Starting.	*Position at Close.*	
1. Maria F.	Maria F.	1
2. Minnie Bell	Minnie Bell	2
3. Lady Partisan	Lady Partisan	3

Time—2:48½.

RACE NO. 5—RUNNING.

Purse, two hundred and fifty dollars. One mile and repeat. First horse, one hundred and fifty dollars; second horse, seventy-five dollars; third horse, twenty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred Hunter, by Norfolk	Wm. Hunter	Colusa
Shiner, by Norfolk	Ab. Ellis	Colusa
Jubilee, by Norfolk	Wm. Billups	Colusa

Position at Starting.	*Position at Close.*	
1. Fred Hunter	Jubilee	1
2. Jubilee	Shiner	2
3. Shiner	Fred Hunter	dis.

Time—1:46; 1:49¾; 1:49½.

RACE NO. 6—TROTTING.

Purse, one hundred and five dollars. Tilton Almont colts, three-year-olds. One mile heats, best three in five, to harness and rule. Premium: One hundred and five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Telegraph	Campbell & Spurgeon	Colusa
Zula Chief	J. Sullivan	Willows
Katie Almont	T. Hazlette	Colusa

Position at Starting.	Position at Close.				
1. Zula Chief	Telegraph	2	1	1	1
2. Telegraph	Katie Almont	1	2	2	2
3. Katie Almont	Zula Chief	3	3	3	3

Time—2:54½; 2:58; 2:48; 2:54½.

FRIDAY, SEPTEMBER 8TH, 1882.

RACE NO. 7—RUNNING.

Stake, four hundred dollars. Free for all. Entries to close with Secretary at 8 P. M. first day of meeting. Mile and repeat.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Joe Howell, by Bonnie Scotland	Stemler & Ayres	Sacramento
Maria F., by Leinster	George Hearst	San Francisco
Jim Brown, by Foster	George Hearst	San Francisco

Position at Starting.	Position at Close.	
1. Joe Howell	Joe Howell	1
2. Maria F.	Maria F.	2

Time—1:46½; 1:46¾.

RACE NO. 8—TROTTING.

Purse, one hundred dollars. One mile heats, best three in five, to harness and rule. Premium: One hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Roanoke, unknown	Chas. Sherman	Chico
Dutchman, unknown	J. F. McIntosh	Chico
Bones, unknown	Jas. Sullivan	Willows
Challenge, unknown	Mr. Taylor	Meridian

Position at Starting.	Position at Close.				
1. Dutchman	Dutchman	2	1	1	1
2. Roanoke	Roanoke	3	2	2	2
3. Bones	Bones	1	3	3	3
4. Challenge	Challenge	4	dis.		

Time—2:45½; 2:39; 2:40½; 2:42½.

SATURDAY, SEPTEMBER 9TH, 1882.

RACE NO. 9—PACING.

Purse, two hundred dollars. One mile heats, best three in five, to harness and rule. Premium: Two hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Roden, unknown	J. W. Wilson	Sacramento
Buz, unknown	N. McDonald	Sacramento
Black Prince, unknown	C. Slutius	Sacramento

Position at Starting.	*Position at Close.*			
1. Buz	Roden	1	1	1
2. Roden	Buz	2	2	2
3. Black Prince	Black Prince	dis.		

Time—2:48½; 2:45½; 2:47½.

RACE NO. 10—TROTTING.

Purse, forty dollars. Entrance, one hundred dollars. One mile heats, best three in five, to harness and rule.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dutchman, unknown	Z. W. Burnham	Chico
Roanoke, unknown	Chas. Sherman	Chico

Position at Starting.	*Position at Close.*				
1. Dutchman	Dutchman	1	2	1	1
2. Roanoke	Roanoke	2	1	2	2

Time—2:44½; 2:37¼; 2:38¼; 2:46¾.

TRANSACTIONS

OF THE

FOURTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of Sonoma, Marin, Solano, Napa, and Lake.

OFFICERS OF THE ASSOCIATION.

J. McM. SHAFTER	President
W. E. COX	Secretary
LEE ELLSWORTH	Treasurer

DIRECTORS.

J. McM. SHAFTER	San Francisco
H. MEACHAM	Petaluma
T. H. INK	St. Helena
A. P. OVERTON	Santa Rosa
JAMES ADAMS	Oakland
L. W. WALKER	Petaluma
WILLIAM ZARTMAN	Petaluma

REPORT.

PETALUMA, December 1, 1882.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Sonoma and Marin District Agricultural Association submit this their report of the transactions of said association, for the year ending this date.

W. E. COX, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

To balance on hand December 1, 1881	$1,779 01	
Received from bills payable	13,701 50	
Received from sale of tickets	4,214 10	
Received from entrance fees to races	1,880 00	
Received from sale of privileges	1,637 80	
Received from State Controller's warrant	1,500 00	
Received from sale grand stand tickets	892 80	
Received from private stalls	567 25	
Received from last year	189 54	
Received from sale lot in old ground	175 00	
Received from hacks and 'busses	170 50	
Received from rent of old ground	120 15	
Received from city appropriation	86 75	
Received from rent of new ground	68 50	
Received from sale hay and straw	19 00	
Overdraft	76 28	
		$27,078 18

Expenditures.

Paid for buildings at new grounds	$12,794 52	
Paid for land	1,555 76	
Paid interest and discount	764 32	
Paid for trees for new grounds	40 75	
Paid bills payable	3,701 50	
Paid for purses in races	3,794 50	
Paid for premiums	2,050 50	
Paid for labor	844 40	
Paid for hay and straw	435 00	
Paid for printing	268 25	
Paid for taxes	221 55	
Paid for music	190 00	
Paid for water	131 50	
Paid insurance	90 00	
Paid for annual address	37 50	
Paid for decorations	30 50	
Paid entrance fee refunded	25 00	
Paid postage	25 23	
Paid Marshal's expenses	20 50	
Paid for stationery	16 15	
Paid expressage	15 75	
Paid indebtedness of 1881	25 00	
		$27,078 18
By overdraft		$76 28

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—THOROUGHBRED HORSES.				
Best stallion, four years old and over	J. B. Chase	Sonoma	Wheatley	Dip. & $20 00
Best mare, four years old and over	William Bihler	Lakeville	Jeannette	$15 00
Best mare, three years old	C. Underhill	Santa Rosa	Nora	$12 00
Best mare, two years old	Pat. Carroll	Bloomfield	Alice	$8 00
Best mare, one year old	C. Underhill	Santa Rosa		$6 00
Best suckling horse colt	M. C. Fisher	Petaluma	Duke	$5 00
Best suckling mare colt	C. Underhill	Santa Rosa		$5 00
Best stallion and six colts	C. Underhill	Santa Rosa	Wheatley and family	$20 00
CLASS II—GRADED HORSES.				
Best stallion, four years old and over	S. S. Drake	Vallejo	Admiral	Dip. & $15 00
Best stallion, two years old	Fred. Kuhnle	Petaluma	Billy Wilson	$8 00
Best stallion, one year old	James Biggins	Sonoma	Comet	$6 00
Best mare, four years old and over	James Biggins	Sonoma	Kate Watson	$12 00
Best mare, three years old	S. S. Drake	Vallejo	Alada	$9 00
Best mare, two years old	James Biggins	Sonoma	Fanny Parnell	$7 00
Best mare, one year old	Fred. Kuhnle	Petaluma	Lottie Wilson	$6 00
Best suckling horse colt	S. S. Drake	Vallejo		$5 00
Best suckling mare colt	James Biggins	Sonoma	Mollie K.	$5 00
Best stallion and six colts	S. S. Drake	Vallejo	Admiral and family	$20 00
CLASS III—HORSES OF ALL WORK.				
Best stallion, four years old and over	Petaluma Horse Br. A.	Petaluma	Crown Prince	Dip. & $15 00
Best stallion, three years old	Pat. Hennelly	Petaluma	Petaluma Prince	$12 00
Best stallion, two years old	P. J. Shafter	Olema	Black Prince	$8 00
Best stallion, one year old	John Russell	Petaluma	Lafayette	$6 00
Best mare, four years old and over	Willis Faught	Windsor	Dolly	$12 00
Best mare, three years old	J. R. Rose	Petaluma	Topsy	$9 00
Best mare, two years old	Willis Faught	Windsor	Peggy	$7 00

Best mare, one year old	V. Berri	Petaluma	Mary	$6 00
Best suckling horse colt	J. R. Rose	Petaluma	McPherson	$5 00
Best suckling mare colt	V. Berri	Petaluma		$5 00
Best stallion and six colts	Petaluma Horse Br. A.	Petaluma	Crown Prince and family	$20 00
CLASS IV—DRAFT HORSES.				
Best stallion, four years old and over, Duke de Chartres barred	Theo. Skillman	Petaluma	Tornado	Dip. & $15 00
Best stallion, three years old	A. J. Pierce	Hamlet	Charlemagne	$12 00
Best stallion, two years old	S. Gillmore	Petaluma	Pollock	$8 00
Best stallion, one year old	P. McAuliffe	Petaluma	Young Duke	$6 00
Best mare, four years old and over	Wm. Bihler	Lakeville	Doll	$12 00
Best mare, two years old	Wm. Hill	Petaluma	Annie	$7 00
Best mare, one year old	Theo. Skillman	Petaluma	Gertrude	$6 00
Best suckling horse colt	S. Gillmore	Petaluma	Pride of the West	$5 00
Best suckling mare colt	J. Dabner	Petaluma		$5 00
Best stallion and six colts	Petaluma Horse Br. A.	Petaluma	Duke de Chartres and family	$20 00
CLASS V—ROADSTERS.				
Best stallion, four years old and over	Wm. Bihler	Lakeville	Grey McClellan	Dip. & $15 00
Best stallion, three years old	Wm. Bihler	Lakeville	Buck Foster	$12 00
Best stallion, two years old	P. J. Shafter	Olema	Greyson	$8 00
Best mare, four years old and over	P. J. Shafter	Olema	Julia	$12 00
Best mare, three years old	Wm. Bihler	Lakeville	Debby Mott	$9 00
Best mare, two years old	Wm. Bihler	Lakeville	Sally	$7 00
Best colt, one year old, sired by a roadster stallion	G. W. Savage	Petaluma	Eureka	$6 00
Best stallion and six colts	F. W. Loeber	Vallejo	Whippleton and family	$20 00
CLASS VI—STANDARD TROTTERS.				
Best stallion, four years old and over	P. J. Shafter	Olema	Rustic	$15 00
CLASS VII—CARRIAGE AND SADDLE HORSES AND JACKS.				
Best matched carriage team, sixteen hands or over, owned as such by one person	A. H. Frazer	Petaluma	Dick and Aleck	$15 00
Best single buggy horse	F. W. Loeber	Vallejo		$7 00
Best saddle horse, three distinct gaits	J. Conway	Petaluma	Bony Boy	$5 00
Best jack	Sylvester Scott	Cloverdale	Monarch	$10 00
Best jenny	Sylvester Scott	Cloverdale	Fanny	$8 00
CLASS VIII—THOROUGHBRED CATTLE—DURHAMS.				
Best bull, four years old and over	J. B. Redmond	Nicasio	Little Pat	$20 00
Best bull, two years old	Page Bros.	Petaluma	Cherry Prince	$10 00
Best bull, one year old	Sylvester Scott	Cloverdale	Royal Oxford	$8 00

First Department—Continued.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Best bull calf	J. B. Redmond	Nicasio	Orion	$5 00
Best cow, four years old and over	Page Bros.	Petaluma	Belle Christmas	$15 00
Best cow, three years old	Page Bros.	Petaluma	Rosetta	$10 00
Best heifer, two years old	Page Bros.	Petaluma	Belle Sonoma	$8 00
Best heifer, one year old	J. B. Redmond	Nicasio	Queen 13th	$5 00
Best heifer calf	J. B. Redmond	Nicasio	Nymph 12th	$4 00
DEVONS.				
Best bull, two years old	J. R. Rose	Petaluma	Curly John	$10 00
Best bull calf	J. R. Rose	Petaluma	Sonoma Boy	$5 00
Best cow, four years old and over	J. R. Rose	Petaluma	Maud 3d	$15 00
Best cow, three years old	J. R. Rose	Petaluma	Ruby	$10 00
Best heifer, two years old	J. R. Rose	Petaluma	Lola	$8 00
Best heifer, one year old	J. R. Rose	Petaluma	Buttercup	$5 00
Best heifer calf	J. R. Rose	Petaluma	Winona	$4 00
AYRSHIRES.				
Best bull, four years old and over	James Biggins	Sonoma	Duke	$20 00
Best bull, three years old	Geo. Bement	Redwood	Archie	$15 00
Best bull, two years old	Geo. Bement	Redwood	Lindo	$10 00
Best bull, one year old	Geo. Bement	Redwood	Macbeth	$8 00
Best bull calf	Geo. Bement	Redwood	Malcolm	$5 00
Best cow, four years old and over	Geo. Bement	Redwood	Ethel Brown	$15 00
Best cow, three years old	Geo. Bement	Redwood	Elaine	$10 00
Best heifer, two years old	Geo. Bement	Redwood	Stellinito	$8 00
Best heifer, one year old	Geo. Bement	Redwood	Sultana	$5 00
Best heifer calf	Geo. Bement	Redwood	Sybil	$4 00
ALDERNEYS.				
Best bull, four years old and over	P. J. Shafter	Olema	Bismarck	$20 00
Best bull, three years old	Mrs. T. M. Chapman	Petaluma	Billy	$15 00
Best bull, two years old	D. S. Dickson	Petaluma	Gen. Grant	$10 00
Best cow, four years old and over	Francis DeLong	Novato	Fashion	$15 00
Best heifer, two years old	A. P. Whitney	Petaluma	Olivia	$8 00

HERDS.				
Best herd of thoroughbred Durhams of not less than six animals, with one bull two years old or over, and not more than one two-year-old, and one yearling, owned by one person	Page Bros.	Petaluma	Cherry Prince and five cows	$15 00
Best herd of thoroughbred Devons of not less than six animals, with one bull two years old or over, and not more than one two-year-old, and one yearling, owned by one person	J. R. Rose	Petaluma	Curly John and five cows	$15 00
ALDERNEYS AND JERSEYS (IN ONE CLASS).				
Best herd of thoroughbred Alderneys, or Jerseys, of not less than six animals, with one bull two years old or over, and not more than one two-year-old, and one yearling, owned by one person	Geo. Bement	Petaluma	Archie and five cows	$15 00
CLASS IX—GRADED CATTLE.				
Best bull, four years old and over	I. R. Jewell	Petaluma	Duke	$10 00
Best bull, three years old	F. Starkie	Petaluma	Valentine	$7 00
Best bull, one year old	Fred. Woodworth	Tomales	El Medico	$4 00
Best bull calf	A. J. Pierce	Hamlet	Pony	$3 00
Best cow, four years old and over	Wm. Hall	Petaluma	Beauty	$8 00
Best heifer, one year old	Ralph Woodworth	Tomales	Pansy	$4 00
Best heifer calf	A. J. Pierce	Hamlet	Blossom	$3 00
CLASS X—THOROUGHBRED SHEEP.				
Best Spanish ram	E. W. Woolsey	Windsor		$8 00
Best five Spanish ewes	E. W. Woolsey	Windsor		$8 00
Best five Spanish ram lambs	E. W. Woolsey	Windsor		$2 50
Best five Spanish ewe lambs	E. W. Woolsey	Windsor		$2 50
Best Shropshire ram	R. H. Crane	Santa Rosa		$8 00
Best five Shropshire ewes	R. H. Crane	Santa Rosa		$8 00
Best Southdown ram	S. W. Kenyon	Santa Rosa		$8 00
Best five Southdown ewes	R. H. Crane	Santa Rosa		$8 00
Best five Southdown ram lambs	R. H. Crane	Santa Rosa		$2 50
Best five Southdown ewe lambs	R. H. Crane	Santa Rosa		$2 50
Best Cotswold ram	L. W. Walker	Petaluma		$8 00
CLASS XI—SWINE.				
Best Berkshire boar	P. J. Shafter	Olema		$8 00
Best Berkshire sow	Fred. Starkie	Petaluma		$5 00
Best China-Poland boar	R. H. Crane	Santa Rosa		$8 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Best China-Poland sow	R. H. Crane	Santa Rosa		$5 00
Best five pigs of any breed	Fred. Starkie	Petaluma		$5 00
CLASS XII—PURE-BREED POULTRY.				
Best exhibit of not less than five varieties	Morris Bros.	Sonoma		$10 00
Best pair Light Brahmas	Morris Bros.	Sonoma		$2 50
Best pair Dark Brahmas	Morris Bros.	Sonoma		$2 50
Best pair Partridge Cochins	Morris Bros.	Sonoma		$2 50
Best pair Black Cochins	Morris Bros.	Sonoma		$2 50
Best pair White Cochins	Morris Bros.	Sonoma		$2 50
Best pair Buff Cochins	Mrs. William Hill	Petaluma		$2 50
Best pair Plymouth Rocks	Morris Bros.	Sonoma		$2 50
Best pair White Leghorns	Morris Bros.	Sonoma		$2 50
Best pair Brown Leghorns	L. C. Byce	Petaluma		$2 50
Best pair White-faced Black Spanish	Morris Bros.	Sonoma		$2 50
Best pair Gold-spangled Polish	William D. Freeman	Tomales		$2 50
Best pair Black and White Crested Polish	Morris Bros.	Sonoma		$2 50
Best pair Golden-spangled Hamburgs	W. D. Freeman	Tomales		$2 50
Best pair Silver-spangled Hamburgs	Morris Bros.	Sonoma		$2 50
Best pair Black Hamburgs	Morris Bros.	Sonoma		$2 50
Best pair Howdans	William D. Freeman	Tomales		$2 50
Best pair Black-breasted Game	T. B. Cary	Petaluma		$2 50
Best pair Brown-red Game	T. B. Cary	Petaluma		$2 50
Best pair Blue Game	T. B. Cary	Petaluma		$2 50
Best pair Black-breasted Game Bantams	Morris Bros.	Sonoma		$2 50
Best pair Black African Bantams	Mrs. William Hill	Petaluma		$2 50
Best pair Seabright Bantams	Morris Bros.	Sonoma		$2 50
Best pair Bronze turkeys	Morris Bros.	Sonoma		$5 00
Best pair wild turkeys	Morris Bros.	Sonoma		$5 00
Best pair White Holland turkeys	Morris Bros.	Sonoma		$5 00
Best pair Toulouse geese	Morris Bros.	Sonoma		$3 00
Best pair Bremen geese	Morris Bros.	Sonoma		$3 00
Best pair China geese	G. W. Ward	Petaluma		$3 00
Best pair Poland geese	Morris Bros.	Sonoma		$3 00
Best pair Pekin ducks	E. K. Evans	Petaluma		$2 50
Best pair Muscovy ducks	J. K. Fix	Sebastopol		$2 50
Best pair Guinea fowls	Morris Bros.	Sonoma		$2 50
Best pair peacocks	Morris Bros.	Sonoma		$3 00

SECOND DEPARTMENT.

GRAINS, FRUITS, WINES, BUTTER, ETC.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—AGRICULTURAL PRODUCTS.			
Robert Crane	Santa Rosa	Best exhibit grain, not less than four varieties	$10 00
Robert Crane	Santa Rosa	Best sack Australian wheat	$5 00
C. S. Gibson	Petaluma	Best sack Chili wheat	$5 00
Robert Crane	Santa Rosa	Best sack Smith wheat	$5 00
F. Starkie	Petaluma	Best sack any other variety	$5 00
W. D. Freeman	Petaluma	Best sack barley	$5 00
W. D. Freeman	Petaluma	Best sack oats	$5 00
C. S. Gibson	Petaluma	Best sheaf Australian wheat	$1 00
Robert Crane	Santa Rosa	Best sheaf Smith wheat	$1 00
C. S. Gibson	Petaluma	Best sheaf Chili wheat	$1 00
Amos Jackson	Petaluma	Best sheaf club wheat	$1 00
Amos Jackson	Petaluma	Best sheaf propo wheat	$1 00
C. S. Gibson	Petaluma	Best sheaf any other variety	$1 00
C. S. Gibson	Petaluma	Best sheaf barley	$1 00
Carr Bros.	Petaluma	Best sheaf oats	$1 00
A. C. Shelton	Petaluma	Best sack shelled corn	$5 00
C. S. Gibson	Petaluma	Best sack flax seed	$3 00
P. Mullally	Bloomfield	Best collection potatoes	$5 00
P. Mullally	Bloomfield	Best single variety potatoes	$2 00
N. Wiswell	Petaluma	Best exhibit squash	$2 00
W. D. Freeman	Petaluma	Best exhibit beans, 3 varieties	$2 50
E. P. Nisson	Petaluma	Best ex'it mangel-wurzel beets	$1 00
E. P. Nisson	Petaluma	Best exhibit turnips	$1 00
N. Wiswell	Petaluma	Best exhibit corn on stalk	$1 50
Geo. F. Ward	Petaluma	Best exhibit cabbage, 5 heads	$1 50
Carr Bros.	Petaluma	Best exhibit watermelons	$1 50
C. S. Gibson	Petaluma	Best exhibit muskmelons	$1 50
Morris Bros.	Sonoma	Best exhibit cantaloupes	$1 50
E. P. Nisson	Petaluma	Best exhibit carrots	$1 00
CLASS II—FRUITS, GRAPES, NUTS, ETC.			
J. K. Fix	Sebastopol	Largest and best collection fruits	$20 00
Miss Maggie Purrington	Sebastopol	Second best collection fruits	$10 00
Mrs. J. Purrington	Sebastopol	Largest and best collection raised in one orchard	$10 00
J. K. Fix	Sebastopol	Best exhibit apples	$5 00
J. K. Fix	Sebastopol	Best single variety, 6 apples	$2 50
G. N. Whitaker	Santa Rosa	Best six varieties apples, 5 each	$3 00
C. S. Gibson	Petaluma	Best collection pears	$5 00
F. F. Ennis	Petaluma	Best single variety six pears	$2 50
E. A. Chapman	Petaluma	Best six varieties pears, 5 each	$3 00
J. K. Fix	Sebastopol	Best exhibit peaches	$2 00
F. F. Ennis	Petaluma	Best exhibit plums	$2 00
Maggie Purrington	Sebastopol	Best six quinces	$2 00
Morris Bros.	Sonoma	Best collection oranges	$3 00
Morris Bros.	Sonoma	Best collection lemons	$3 00
Morris Bros.	Sonoma	Largest and best collection grapes, 12 varieties	$20 00
Mrs. J. Purrington	Sebastopol	Second best collection grapes, 12 varieties	$10 00
Morris Bros.	Sonoma	Best collection grapes raised in one vineyard	$10 00
Morris Bros.	Sonoma	Best exhibit foreign grapes	$5 00
Morris Bros.	Sonoma	Best exhibit California grapes	$3 00
Mrs. J. Purrington	Sebastopol	Largest bunch grapes	$2 00
Morris Bros.	Sonoma	Best collection figs, 10 pounds	$2 00

Second Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
W. W. Chapman	Petaluma	Best collection almonds, 10 lbs.	$2 00
Morris Bros.	Sonoma	Best col. English walnuts, 5 lbs.	$2 00
CLASS III—FRUITS, PRESERVES, ETC.			
Mrs. E. A. Green	Petaluma	Best ex. dried fruits, 5 varieties	$10 00
C. & S. Wightman	Sebastopol	Best ex. dried apples, 5 pounds	$2 00
C. & S. Wightman	Sebastopol	Best ex. dried peaches, 5 pounds	$2 00
Mrs. E. A. Green	Petaluma	Best ex. dried plums, 5 pounds	$2 00
F. F. Ennis	Petaluma	Best ex. dr. plums seeded, 5 lbs.	$2 00
W. W. Chapman	Petaluma	Best exhibit raisins, 5 pounds	$5 00
Mrs. E. A. Green	Petaluma	Best ex. can'd fruits, 5 varieties	$5 00
Mrs. W. W. Chapman	Petaluma	Best ex. jellies, five varieties	$4 00
Mrs. J. P. Twist	Petaluma	Best ex. preserves, 3 varieties	$3 00
Miss A. Dohlman	Petaluma	Best ex. pickles, 3 varieties	$3 00
Mrs. N. M. Hedges	Petaluma	Best exhibit catsup, 3 bottles	$1 50
CLASS IV—BUTTER, CHEESE, AND BACON.			
George F. Ward	Petaluma	Best box fresh butter	$10 00
A. J. Pierce	Hamlet	Second best	$5 00
George F. Ward	Petaluma	Best packed butter	$10 00
A. J. Pierce	Hamlet	Second best	$5 00
I. R. Jewell	Petaluma	Best exhibit cheese	$10 00
Robert Crane	Santa Rosa	Best hams, three or more	$5 00
Robert Crane	Santa Rosa	Best side bacon, three or more	$5 00
CLASS V—WINES, CIDER, ALE, ETC.			
Geo. W. Edleman	Petaluma	Best exhibit wines	$20 00
Geo. W. Edleman	Petaluma	Best exhibit champagne	$4 00
Geo. W. Edleman	Petaluma	Best exhibit port wine	$4 00
Geo. W. Edleman	Petaluma	Best exhibit red wine	$4 00
Geo. W. Edleman	Petaluma	Best exhibit white wine	$4 00
W. J. Hunt	Sebastopol	Best exhibit blackberry wine	$4 00
Geo. W. Edleman	Petaluma	Best exhibit brandy	$4 00

THIRD DEPARTMENT.

DOMESTIC MANUFACTURES.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—MISCELLANEOUS.			
Ellsworth & Wiswell	Petaluma	Best exhibit furniture	$10 00
Ellsworth & Wiswell	Petaluma	Best exhibit upholstery	$7 50
M. Berger	Petaluma	Best exhibit gloves	$2 00
W. H. Worth	Petaluma	Best exhibit iron castings	$4 00
W. H. Worth	Petaluma	Best exhibit brass castings	$4 00
M. Walsh	Petaluma	Best exhibit boots	$5 00
Santa Rosa Woolen Mills	Santa Rosa	Best exhibit woolen goods	Diploma and $10
Santa Rosa Woolen Mills	Santa Rosa	Best pair blankets	$3 00
M. Berger	Petaluma	Best exhibit tailoring	$5 00
Joseph A. Cowen	Petaluma	Best exhibit bookbinding	Diploma and $2
A. Doty	Petaluma	Best exhibit brooms	$2 00
Geo. Wager	Vallejo	Best model gate	$3 00
J. J. Buckius	Petaluma	Best exhibit tinware	$5 00

Third Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Ellsworth & Wiswell	Petaluma	Best sign and ornamen'l paint'g	$2 00
V. Warnekross	Petaluma	Best exhibit gunsmithing	$5 00
M. Roth	Petaluma	Best exhibit marble work	Diploma and $5
M. Roth	Petaluma	Best specimen stonecutting	$4 00
A. J. Pierce	Hamlet	Best butter box	$2 00
Ellsworth & Wiswell	Petaluma	Best chairs	$3 00
Jameson & Ormsby	Petaluma	Best exhibit soap	Diploma and $5
CLASS II — CARRIAGES, BUGGIES, AND WAGONS.			
Wm. Zartman & Co.	Petaluma	Best exhibit carriages, buggies, and wagons	$20 00
R. Spotswood & Co.	Petaluma	Second best	$12 00
Wm. Zartman & Co.	Petaluma	Best family carriage	$10 00
Wm. Zartman & Co.	Petaluma	Best open buggy	$8 00
D. W. C. Putnam	Petaluma	Best breaking cart	$4 00
E. Hopes	Petaluma	Best spring wagon	$8 00
H. Pimm	Petaluma	Best carriage painting	$8 00
Guinn & Brainerd	Petaluma	Best carriage trimming	$8 00
CLASS III—SADDLERY AND HARNESS.			
Guinn & Brainerd	Petaluma	Best exhibit saddlery	Diploma and $15
Guinn & Brainerd	Petaluma	Best set double harness	$7 00
Guinn & Brainerd	Petaluma	Best set single harness	$5 00
Guinn & Brainerd	Petaluma	Best saddle	$4 00
CLASS IV— AGRICULTURAL IMPLEMENTS.			
E. J. Holly	Lakeville	Best cultivator	$5 00
W. H. Worth	Petaluma	Best horse-power	$5 00
C. P. Hatch	Petaluma	Best windmill	$8 00
C. P. Hatch	Petaluma	Best butter worker	$3 00
J. W. Cassidy	Petaluma	Best model fruit drier	$10 00

FOURTH DEPARTMENT.

FINE ARTS, PLANTS, AND FLOWERS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—PAINTING, ORNAMENTAL WORK, ETC.			
Mrs. S. D. Towne	Petaluma	Best exhibit in Class 1, manufactured by one person	$10 00
Mrs. S. D. Towne	Petaluma	Best collection of paintings	$5 00
Miss Amelia Buckius	Petaluma	Best specimen painting in oil on canvas	$5 00
M. Schramm	Santa Rosa	Best portrait painting	$5 00
Mrs. S. D. Towne	Petaluma	Best painting in water colors on wood, silk, or papier mache	$3 00
Mrs. S. D. Towne	Petaluma	Best porcelain painting	$3 00
F. O. Young	Petaluma	Best painting in India ink	$2 50
Mrs. S. D. Towne	Petaluma	Best panel painting	$2 50
M. Schramm	Santa Rosa	Best collection of photographs	Dip. and $5 00
F. Nauret	Petaluma	Best specimen pencil drawing	$2 00

Fourth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Miss A. Buckius	Petaluma	Best specimen sketching from nature	$3 00
F. O. Young	Petaluma	Best specimen penmanship	$2 00
Miss Ella Gale	Petaluma	Best specimen hair work	$2 00
Mrs. N. W. Scudder	Petaluma	Best and largest variety wax work	$5 00
Mrs. N. W. Scudder	Petaluma	Best wax flowers	$2 00
Mrs. N. W. Scudder	Petaluma	Best wax fruit	$2 00
Mrs. Wm. Martin	Petaluma	Best specimen leather work	$2 00
Mrs. N. W. Scudder	Petaluma	Best specimen shell work	$2 00
Mrs. A. H. Patty	Petaluma	Best specimen bead work	$2 00
Mrs. N. W. Scudder	Petaluma	Best wreath, any other kind	$2 00
M. Roth	Petaluma	Best specimen crayon drawing	$2 00
CLASS II—EMBROIDERY, NEEDLEWORK, SEWING, KNITTING, ETC.			
Miss Eva Maynard	Petaluma	Best ex. needlework, 10 varie.	$10 00
Mrs. A. H. Patty	Petaluma	Best hand sewing	$3 00
Mrs. J. L. Winans	Petaluma	Best worsted embroidery	$2 50
Mrs. E. K. Tupper	Petaluma	Best tufted worsted work	$2 00
Mrs. A. J. Pierce	Petaluma	Best silk emb. on silk or velvet	$3 00
Miss Sallie Robinson	Petaluma	Best silk embroidery on cotton or woolen	$2 50
Miss Amelia Buckius	Petaluma	Best cotton embroidery	$2 00
Mrs. A. H. Patty	Petaluma	Best embroidery on lace	$2 00
Mrs. W. H. Worth	Petaluma	Best gimpure lace	$2 00
Mrs. T. McGuire	Petaluma	Best chenille work	$2 00
Mrs. A. H. Patty	Petaluma	Best transferred work	$2 00
Miss Ella Tupper	Petaluma	Best crochet work	$1 00
Mrs. W. H. Worth	Petaluma	Best tatting	$2 00
Mrs. Frank Tate	Sonoma	Best netting	$2 00
Mrs. T. McGuire	Sonoma	Best hemstitching	$2 00
Mrs. A. H. Patty	Sonoma	Best Portuguese lace	$2 00
Mrs. A. H. Patty	Sonoma	Best Spanish lace	$2 00
Miss Eva Maynard	Sonoma	Best embroidered creuel work	$2 00
Miss Sallie Robinson	Sonoma	Best Kensington work	$2 00
Miss Mamie Van Doren	Sonoma	Best embroidered sofa cushion	$2 00
Miss Mamie Van Doren	Sonoma	Best embroidered wall panel	$2 00
Mrs. T. M. Chapman	Sonoma	Best outline embroidery	$2 00
Mrs. A. J. Pierce	Sonoma	Best lambrequin	$2 00
Miss Hattie Fairbanks	Sonoma	Best ottoman cover	$2 00
Mrs. T. McGuire	Sonoma	Best chenille emb. chair strip	$2 00
Mrs. Frank Tate	Sonoma	Best crochet shawl	$2 00
Miss Katie Zartman	Sonoma	Best set darned netting pillow and sheet shams	$2 00
Mrs. E. Hopes	Sonoma	Best hearth rug	$2 00
Mrs. William Martin	Sonoma	Best pair woolen stockings	$2 00
Mrs. Frank Tate	Sonoma	Best piece knitting	$2 00
Mrs. Betsey Picket	Sonoma	Best knit quilt	$2 00
Mrs. William Farrell	Sonoma	Best quilting	$2 00
Mrs. M. Schlosser	Sonoma	Best ex. family machine sewing	$3 00
Mrs. A. H. Patty	Sonoma	Best baby's dress	$2 50
Mrs. A. B. Derby	Sonoma	Best gent's shirt	$2 00
Mrs. M. Schlosser	Petaluma	Best patchwork	$2 00
Mrs. T. M. Chapman	Petaluma	Best rag carpet	$4 00
Thomas A. Gilbert	Petaluma	Best exhibit millinery	$7 50
Thomas A. Gilbert	Petaluma	Best bonnet	$3 00
CLASS III—BREAD, CAKES, ETC.			
Miss Sarah Cassidy	Petaluma	Best wheat bread	$3 00
Mrs. J. J. Buckius	Petaluma	Best Boston brown bread	$3 00
Mrs. A. B. Derby	Petaluma	Best corn bread	$2 50
Miss A. Dahlman	Petaluma	Best fruit cake	$3 50
Mrs. J. J. Buckius	Petaluma	Best pound cake	$3 00
Mrs. W. W. Chapman	Petaluma	Best sponge cake	$2 50
Miss A. Dahlman	Petaluma	Best coffee cake	$2 00
		Best assorted tarts	$2 00

FOURTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS IV—PLANTS, BOUQUETS, ETC.			
Mrs. E. Heald	Petaluma	Best exhibit begonias, 20 specimens	$2 50
Mrs. N. M. Hedges	Petaluma	Best floral design	$3 00
Mrs. A. J. Pierce	Petaluma	Best exhibit cut flowers, 200 specimens	$5 00
Mrs. A. J. Pierce	Petaluma	Best exhibit cut dahlias, 100 specimens	$2 50
Mrs. I. G. Wickersham	Petaluma	Best hanging basket	$2 50
Mrs. J. J. Buckius	Petaluma	Best pair vase bouquets, dried flowers and grasses, natural color	$2 00
Mrs. N. M. Hedges	Petaluma	Best pair vase bouquets, dried flowers and grasses mixed	$2 00

CHILDREN'S DEPARTMENT.

FOR CHILDREN UNDER SIXTEEN YEARS OF AGE.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Libbie Cassidy	Petaluma	Best plain sewing	$3 00
Ralph Woodworth	Tomales	Best braiding	$2 00
Annie Tate	Sonoma	Best knitting	$2 00
Libbie Cassidy	Petaluma	Best darning	$2 00
Walter Toune	Petaluma	Best pencil drawing	$2 00
Fred. and Ralph Woodworth	Tomales	Best hair work	$2 00
Luella Laird	Petaluma	Best specimen penmanship	$2 00
Eva May Cowles	Petaluma	Best wheat bread	$2 00
Eddie Buckius	Petaluma	Best exhibit mechanical skill	$2 50

SWEEPSTAKES.

FREE FOR THE STATE.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Winans & Goshen	Petaluma	Best exhibit groceries	
L. Chopard	Petaluma	Best exhibit silverware	
D. M. Osborn & Co.	San Francisco	Best exhibit agricul'al imple'nts	
J. J. Buckius	Petaluma	Best exhibit pumps, stoves, and tinware	
Ellsworth & Wiswell	Petaluma	Best exhibit furniture	
A. M. Goodenough	Petaluma	Best exhibit pianos and organs	
Wheeler & Wilson No. 8	Petaluma	Best sewing machine for all purposes	
Wheeler & Wilson No. 8	Petaluma	Best sew. mach. for fancy work	
Ellsworth & Wiswell	Petaluma	Best exhibit decorative and ornamental paper-hangings	
C. P. Troy	San Francisco	Best collection paintings	
Mrs. S. D. Toune	Petaluma	Second best collection paintings	

MISCELLANEOUS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Dr. G. W. Dutton	Tomales	Breaking cart	Special mention
I. L. Deas	Petaluma	Incubators	Diploma & special prem. $15 00
Mrs. J. Purrington	Sebastopol	Cocoons	Special mention
Fred. Laird	Petaluma	Scroll sawing	Special mention
Frank F. Ennis	Petaluma	Collection of plums	Special mention
George Ross	Petaluma	Exhibit photographs	Special mention
D. R. McLennan	St. Helena	Improved pleasure cart	Special mention
T. H. Clemens	Petaluma	Sewing machines	Special mention
Miss N. Trueholtz	Petaluma	Three oil paintings	Special mention
Mrs. Betsey Picket	Petaluma	Two braided mats	Special mention
Mrs. James Laughnane	Petaluma	Quilt made without needle or thread	Special mention
V. Warnekross	Petaluma	Tents, sporting articles, etc.	Special mention
M. Roth's class	Petaluma	Eighty pencil drawings	Special mention
C. P. Hatch	Petaluma	Pair butter molds	Special mention
W. S. Brown	Petaluma	Granite monuments and designs	Special mention
P. S. Bayley	San Francisco	Grain cleaner	Special mention
Mrs. E. Heald	Petaluma	Collection of plants	Spec. prem. $10

SPEED PROGRAMME.

TUESDAY, AUGUST 29TH, 1882.

RACE NO. 1—TROTTING.

2:50 Class. For named horses in the district. One mile heats, best three in five, in harness. Purse, four hundred dollars. First horse, two hundred and forty dollars; second horse, one hundred and twenty dollars; third horse, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Placeda, by Alexander; dam, Countess	E. B. Conley	Petaluma
Huntress, by Admiral; dam, Flora	S. S. Drake	Vallejo
Como, by Elmo; dam, Juno	C. F. D. Hastings	Suisun
Lady Zane, by A. W. Richmond; dam, unknown	H. G. Carrillo	Santa Rosa
Emma Taylor, by Alexander; dam, a Taylor mare	M. O. Reiley	Petaluma
St. Patrick, by Eclipse; dam, by McClellan	S. Sperry	Petaluma
Dandy Boy; pedigree unknown	W. G. Atkins	Santa Rosa
Roscoe, by Mohawk Chief; dam, by Venture	J. B. Chase	Sonoma
Little Jim; pedigree unknown	S. P. Taylor	Olema

Position at Starting.	*Position at Close.*					
1. Huntress	Huntress	1	2	2	1	1
2. Como	Como	2	1	1	2	2
3. Placeda	Placeda	3	3	3	3	3
4. Emma Taylor	Roscoe	4	dis.			
5. Roscoe	Emma Taylor	5	dis.			

Time—2:40¼; 2:39¼; 2:38; 2:39¼; 2:38.

WEDNESDAY, AUGUST 30TH, 1882.

RACE NO. 2—TROTTING.

2:25 Class. For all horses owned on Pacific Coast. Five to enter, three to start. One mile heats, best three in five, in harness. Purse, seven hundred dollars. First horse, four hundred and twenty dollars; second horse, two hundred and ten dollars; third horse, seventy dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Cairo, by Chieftain; dam, by Odd Fellow	J. Hughes	San Francisco
Crown Point, by Speculation; dam, Young Martha	G. Valensin	Hicksville
Starr King, by Geo. M. Patchen; dam, May Wonder	Chas. W. Welby	San Francisco
Sweetness, by Volunteer; dam, by Edward Everett	J. Goldsmith	Oakland

Position at Starting.	*Position at Close.*			
1. Cairo	Sweetness	1	1	1
2. Sweetness	Starr King	2	2	2
3. Starr King	Cairo	3	3	dis.
4. Crown Point	Crown Point	4	4	3

Time—2:27½; 2:25½; 2:24½.

RACE NO. 3—TROTTING.

Purse, three hundred and fifty dollars. For three-year-olds raised and owned in the district. One mile heats, best three in five, in harness. First horse, two hundred and ten dollars; second horse, one hundred and five dollars; third horse, thirty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ned, by Overland; dam, unknown	W. M. Woods	Vallejo
Magnet, by Brigadier; dam, Gazelle	E. B. Conley	Petaluma
Debby Mott, by Gray McClellan; dam, by John Nelson	S. Crandell	Petaluma
Lady Starr, by Naubuc; dam, unknown	W. J. Starr	St. Helena
Buck Foster, by Gen. Dana; dam, by John Nelson	J. E. Foster	Petaluma
Sister, by Admiral; dam, Black Flora	S. S. Drake	Vallejo

Position at Starting.	*Position at Close.*			
1. Sister	Ned	1	1	1
2. Ned	Debby Mott	3	2	2
3. Debby Mott	Sister	2	3	3

Time—2:54; 2:47½; 2:45½.

THURSDAY, AUGUST 31ST, 1882.

RACE NO. 4—TROTTING.

Purse, one hundred and fifty dollars. For yearlings owned and raised in the district. One mile heat, in harness. First horse, ninety dollars; second horse, forty-five dollars; third horse, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Blue Gown, by Gus; dam, by Geo. M. Patchen	J. C. Reardon	Vallejo
Dawn, by Nutwood; dam, Countess	E. B. Conley	Petaluma
Dublin, by Admiral; dam, Bell Alta	Wm. Bourke	Petaluma
Young Eureka, by Eureka; dam, Fairbank's mare	John Pfaw	Petaluma
Viking, by Rustic; dam, by Sawyer's Stockbridge Chief	P. J. Shafter	Olema
No name, by Gen. Dana; dam, by John Nelson	J. E. Foster	Petaluma
Conemara, by Volunteer; dam, by Speculation	F. Needham	Petaluma

Position at Starting.	*Position at Close.*	
1. Conemara	Dawn	1
2. Blue Gown	Blue Gown	2
3. Dawn	Viking	3
4. Viking	Conemara	4

Time—3:08¼.

RACE No. 5—TROTTING.

Purse, five hundred dollars. For all horses owned on the Pacific Coast. One mile heats, best three in five, in harness. First horse, three hundred dollars; second horse, one hundred and fifty dollars; third horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Rowdy Boy, by Rustic; dam, by Belmont	J. Garland	San Francisco
Vanderlyn, by Geo. M. Patchin; dam, a Joseph mare	P. Farrell	San Francisco
Marin, by Geo. M. Patchin; dam, unknown	B. T. Miller	San Rafael
Johnny, by Auctioneer Johnny; dam, unknown	Wm. Bourke	Petaluma
Frank Mosco; pedigree unknown	A. B. Cooper	Alameda

Position at Starting.	*Position at Close.*							
1. Frank Mosco	Vanderlyn	1	1	5	5	dis.		
2. Rowdy Boy	Frank Mosco	2	3	2	3	3		
3. Vanderlyn	Johnny	3	2	4	1	1	2	1
4. Marin	Rowdy Boy	4	4	1	2	2	1	2
5. Johnny	Marin	5	5	3	4	4		

Time—2:31½; 2:32½; 2:31¼; 2:30¼; 2:34; 2:35½; 2:35.

RACE No. 6—RUNNING.

Purse, one hundred and fifty dollars. For special running, one mile and repeat. First horse, one hundred dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Estella Clark, by Ironclad; dam, Orphan Girl	H. Carrillo	Santa Rosa
Haddington, by Imp. Haddington; dam, Prairie Flower	P. J. Shafter	Olema

Position at Starting.	*Position at Close.*			
1. Estella Clark	Estella Clark	1	2	2
2. Haddington	Haddington	2	1	1

Time—49¾; 51; 50½.

FRIDAY, SEPTEMBER 1ST, 1882.

RACE No. 7—TROTTING.

Purse, three hundred dollars. For two-year-olds, raised and owned in the district. One mile heats, best two in three, in harness. First horse, one hundred and eighty dollars; second horse, ninety dollars; third horse, thirty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mayday, by Eugene Casserly; dam, by Toronto Chief	G. C. Fountain	Vallejo
Ideal, by Abbotsford; dam, Countess	E. B. Conley	Petaluma
Mike, by Eureka; dam, hipped-back mare Hambletonian	John Pfaw	Petaluma
Grayson, by Norman Rustic; dam, by Whipple	P. J. Shafter	Olema
Standard, by Admiral; dam, unknown	S. S. Drake	Vallejo
Clara Patterson, by Gray McClellan; dam, by Gen. Dana	J. E. Foster	Petaluma

Race No. 7—Continued.

Position at Starting.	Position at Close.			
1. Ideal	Ideal	1	2	2
2. Mayday	Mayday	2	1	1

Time—3:03½; 3:02; 2:59½.

Race No. 8—Trotting.

Purse, four hundred dollars. For named horses. One mile heats, three in five, in harness. First horse, two hundred and twenty-five dollars; second horse, one hundred and ten dollars; third horse, sixty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Cairo, by Chieftain; dam, by Odd Fellow	P. Farrell	San Francisco
Bullet, by Echo; dam, unknown	L. H. Titus	Los Angeles
Crown Point, by Speculation; dam, by Edward Everett	G. Valensin	Hicksville

Position at Starting.	Position at Close.				
1. Crown Point	Crown Point	1	2	1	1
2. Bullet	Cairo	2	1	2	2
3. Cairo	Bullet	3	3	3	3

Time—2:30½; 2:26; 2:27½; 2:30¾.

SATURDAY, SEPTEMBER 2D, 1882.

Race No. 9—Running.

Purse, one hundred dollars. For running three quarters mile, single dash. First horse, sixty-five dollars; second horse, thirty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Estella Clark, by Ironclad; dam, Orphan Girl	H. G. Carrillo	Santa Rosa
Quien Sabe; pedigree unknown	S. Duncan	Hollister

Position at Starting.	Position at Close.	
1. Estella Clark	Quien Sabe	1
2. Quien Sabe	Estella Clark	2

Time—1:20½.

Race No. 10—Trotting.

Purse, one hundred dollars. For yearlings. One mile heat, in harness. First horse, seventy-five dollars; second horse, twenty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Viking, by Rustic; dam, Sawyer's Stockbridge Chief	P. J. Shafter	Olema
Conemara, by Volunteer; dam, by Speculation	F. Needham	Petaluma
Blue Gown, by Gus; dam, by Geo. M. Patchen	J. C. Reardon	Vallejo

Race No. 10—Continued.

Position at Starting.	*Position at Close.*	
1. Viking	Blue Gown	1
2. Conemara	Viking	2
3. Blue Gown	Conemara	3

Time—3:23.

Race No. 11—Pacing.

Purse, three hundred dollars. For named horses. One mile heats, best three in five, in harness. First horse, one hundred and eighty dollars; second horse, ninety dollars; third horse, thirty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ouida, by Black Hawk; dam, by Fannie King	G. Valensin	Hicksville
Johnny Weigle; pedigree unknown	S. Sperry	Petaluma
Lady Hayes, by Hiram Tracy; dam, a Nelson mare	E. P. Dennison	Oakland

Position at Starting.	*Position at Close.*					
1. Ouida	Johnny Weigle	1	1	2	2	2
2. Johnny Weigle	Lady Hayes	2	2	3	3	3
3. Lady Hayes	Ouida	3	3	1	1	1

Time—2:25½; 2:28; 2:26½; 2:30¼; 2:32¼.

TRANSACTIONS

OF THE

FIFTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of San Mateo and Santa Clara.

OFFICERS OF THE ASSOCIATION.

ABRAM KING	President
T. S. MONTGOMERY	Secretary
W. D. TISDALE	Treasurer

DIRECTORS.

ABRAM KING	San José
W. T. ADEL	San José
CYRUS JONES	San José
J. R. WELLER	Milpitas
WILLIAM TENNANT	Tennants
GEORGE BEMENT	Redwood City
ALEX. GORDON	Redwood City
N. J. HAINES	San José

REPORT.

SAN JOSÉ, December 1, 1882.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Fifth District Agricultural Association submit this their report of the transactions of said Association, for the year ending this date.

T. S. MONTGOMERY, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Balance in hands Treasurer last statement	$1,342 15	
Contributed by public spirited citizens	825 07	
Rent of park house and stalls	165 00	
Incidentals	93 10	
Privileges	2,171 10	
Sale of hay	741 25	
Receipts at park and pavilion—admission	7,679 75	
Entries and forfeits	2,657 50	
State appropriation	1,200 00	
		$16,874 92

Expenditures.

First Regiment, for holding encampment at park	$ 850 00	
Printing and advertising	833 10	
Labor and salaries	2,037 20	
Premiums and purses	8,421 00	
Refunded, on account of privileges, etc.	30 50	
Rent of park and pavilion	1,125 00	
Hay, grain, straw, and hay baling	404 45	
Membership to National Trotting Association	56 00	
Lumber	561 17	
Die, for medals	30 00	
Music	136 00	
Electric light and gas	57 00	
Water	71 40	
Incidentals	534 69	
Balance in hands of Treasurer	1,727 41	
		$16,874 92

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—THOROUGHBREDS.				
Best stallion, four years old and over	J. & H. C. Judson	Santa Clara	Wildidle	$15 00
Second best	Wm. Boots	San José	Kingston	$10 00
Best stallion, three years old	Wm. Boots	San José	Inauguration	$10 00
Best mare, four years old and over	Wm. Boots	San José	Mollie H.	$10 00
Second best	J. & H. C. Judson	Santa Clara	Ella Doane	$5 00
Best sire, with not less than five of his colts, all thoroughbreds	J. & H. C. Judson	Santa Clara	Wildidle and five colts	$25 00
Best mare, with three colts	J. & H. C. Judson	Santa Clara	Nettie Brown and three colts	$20 00
Best stallion, other than thoroughbred, with not less than five of his colts	S. S. Drake	Vallejo	Admiral and six colts	$20 00
Best mare, other than thoroughbred, and three colts	James Lendrum	San José	Maggie and three colts	$15 00
HORSES OF ALL WORK.				
Best stallion, four years old and over	A. T. Hatch	Suisun	Admiral	$10 00
Second best	Massey Thomas	Gilroy	Pollack	$5 00
Best stallion, three years old	Daniel Hellyer	San José	Clifford	$8 00
Best stallion, two years old	J. R. Weller	Milpitas	H. G. B.	$6 00
Second best	S. S. Drake	Vallejo	Hendricks	$4 00
Best stallion, one year old	Edward Moran	San José	California Nutwood	$5 00
Second best	James Weatherhead	San Jose	Young St. Lawrence	$3 00
Best mare, four years old and over	S. S. Drake	Vallejo	Eve	$8 00
Second best	John Wright	San José	Polly	$4 00
Best mare, three years old	A. Barris	San José	Patty	$6 00
Best mare, two years old	T. Andrews	San José	Minnie	$5 00
Best mare, one year old	S. S. Drake	Vallejo	Lena	$4 00
Second best	F. W. Barstow	San José	Beauty	$3 00
Best suckling colt	John Wright	San José	Lottie	$2 00

DRAFT HORSES.				
Best stallion, four years old and over	J. Garcia	Coyote	Ottawa Chief	$10 00
Best stallion, three years old	Chas. Clark	Milpitas	Young Hercules	$8 00
Second best	W. P. Phillips	Hollister	California Chief	$4 00
Best stallion, two years old	James Lendrum	San José	Napoleon	$6 00
Best stallion, one year old	Thomas Gallagher	San José	George	$5 00
Best suckling colt	S. H. Chase	San José	Paul Revere	$3 00
Second best	Geo. Easton	Gilroy	Prince Albert	$2 00
Best mare, four years old and over	S. H. Chase	San José	Kate	$8 00
Second best	James Lendrum	San José	Maggie	$5 00
Best mare, three years old	P. H. Doyle	Santa Clara	Lady Hercules	$7 00
Best mare, one year old	James Lendrum	San José	Fan	$4 00
Best suckling colt	James Lendrum	San José	Bess	$3 00
ROADSTERS.				
Best stallion, three years old	E. S. Smith	San José	Baywood	$8 00
Best stallion, two years old	E. S. Smith	San José	Fleetwood	$7 00
Best mare, four years old and over	E. Topham	Milpitas	Belle	$8 00
Best mare, three years old	S. S. Drake	Vallejo	Sister	$7 00
Best mare, two years old	E. Topham	Milpitas	Lady Nutwood	$5 00
GELDINGS.				
Best gelding, four years old and over	Ed. Younger	San José	Whisper	$10 00
JACKS AND JENNIES.				
Best jack, four years old and over	J. R. Green	San Francisco	Lippincott	$10 00
CLASS II—CATTLE—DURHAMS.				
Best bull, three years old and over	C. Younger	San José	2d Duke of Alameda	$15 00
Second best	Mrs. M. E. Bradley	San José	1st Duke of Alameda	$10 00
Best bull, one year old	C. Younger	San José	Forest King	$7 00
Second best	Mrs. M. E. Bradley	San José	Centreville Duke	$5 00
Best bull calf	Mrs. M. E. Bradley	San José	Royal Bengal	$5 00
Second best	C. Younger	San José	8th Duke of Forest Home	$3 00
Best cow and calf (calf under one year of age)	Mrs. M. E. Bradley	San José	Fanny 3d and calf	$15 00
Second best	William Quinn	San José	Fuchsia 2d and calf	$10 00
Best cow, three years old and over	C. Younger	San José	Jessie Maynard	$15 00
Second best	William Quinn	San José	Fuchsia 4th	$10 00
Best cow, two years old	C. Younger	San José	Oxford Rose 3d	$12 00
Second best	C. Younger	San José	7th Rose of Forest Home	$6 00
Best cow, one year old	C. Younger	San José	Red Dolly 11th	$7 00
Second best	William Quinn	San José	Innocence	$5 00
Best heifer calf	William Quinn	San José	Peach Blossom	$5 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Second best	C. Younger	San José	Red Dolly 14th	$3 00
HERDS.				
Best thoroughbred herd of not less than five animals and not more than one male, not under two years of age, owned by one person	C. Younger	San José	2d Duke of Alameda, Red Dolly 2d, Oxford Rose 3d, 7th Rose of Forest Home, Jessie Maynard	$20 00
SWEEPSTAKES.				
Best bull of any breed or age	C. Younger	San José	2d Duke of Alameda	$20 00
Best cow of any breed or age	C. Younger	San José	Jessie Maynard	$15 00
Best bull of any breed or age, with three of his calves	C. Younger	San José	2d Duke of Alameda, and 8th Duke of Forest Home, 10th Rose of Forest Home, Red Dolly 14th	$15 00
AYRSHIRE—BULLS.				
Best three years old and over	Geo. Bement	Redwood City	Archie	$15 00
Best two years old	Geo. Bement	Redwood City	Lindo	$12 00
Best one year old	Geo. Bement	Redwood City	Macbeth	$7 00
Best bull calf	Geo. Bement	Redwood City	Malcolm	$5 00
COWS.				
Best three years old and over	Geo. Bement	Redwood City	Elaine	$15 00
Second best	Geo. Bement	Redwood City	Ethel Brown	$10 00
Best two years old	Geo. Bement	Redwood City	Stellinita	$12 00
Best one year old	Geo. Bement	Redwood City	Sultana	$7 00
Best heifer calf	Geo. Bement	Redwood City	Sybil	$5 00
Best cow and calf	Geo. Bement	Redwood City	Lady Merryton and calf	$15 00
Second best	Geo. Bement	Redwood City	Stellina and twins	$10 00
HERDS.				
	Geo. Bement	Redwood City	Archie, Lady Merryton, Stellina, Ethel Brown, and Elaine	$20 00
JERSEY—BULLS.				
Best three years old and over	B. F. Fish	Santa Clara	General Grant	$15 00
Best two years old	C. B. Polhemus	San José	Jersey Boy	$12 00

Best one year old	C. B. Polhemus	San José	Oscar Wilde	$7 00
Second best	J. T. Hoyt	San Mateo	Banker	$5 00
Best bull calf	C. B. Polhemus	San José	Tom	$5 00
Second best	C. B. Polhemus	San José	Jerry	$3 00
COWS.				
Best cow and calf	C. B. Polhemus	San José	Cherry and calf	$15 00
Second best	C. B. Polhemus	San José	Matella and calf	$10 00
Best cow, three years old and over	C. B. Polhemus	San José	Fairy 2d	$15 00
Second best	C. B. Polhemus	San José	Pearl 2d	$10 00
Best two years old	C. B. Polhemus	San José	Pearl 3d	$12 00
Second best	C. B. Polhemus	San José	Matella 2d	$6 00
Best one year old	C. B. Polhemus	San José	Gypsy 2d	$7 00
Second best	C. B. Polhemus	San José	Sunflower	$5 00
Best heifer calf	C. B. Polhemus	San José	Bessie 4th	$5 00
HERDS.				
Best thoroughbred herd of not less than five animals, and not more than one male, not under two years old, owned by one person	C. B. Polhemus	San José	Jersey Boy, Cherry, Matella, Pearl 2d, and Fairy 2d	$20 00
GRADED CATTLE.				
Best cow, four years old and over	J. B. Portal, Jr.	San José	Belle 1st	$10 00
Best one year old	G. P. Beal	San José	Fawn	$6 00
CLASS III—SHEEP—MERINO.				
Best ram	A. Agnew	Santa Clara	Long Wool 3d	$10 00
Best ewe	A. Agnew	Santa Clara	Jennie	$10 00
SOUTHDOWN.				
Best ram	Geo. Bement	Redwood	Sonoma	$10 00
Best ewe	J. P. Bubb	Saratoga	Queen	$10 00
COTSWOLD.				
Best ram	Wm. Quinn	San José	Prince	$10 00
Best ewe	C. Younger	San José		$10 00
Best pen of three ram lambs	C. Younger	San José		$5 00
Best pen of five ewe lambs	Wm. Quinn	San José		$5 00
GRADED SHEEP.				
Best ram	Wm. Quinn	San José	Fred	$5 00
Best ewe	Wm. Quinn	San José	Jane	$5 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
GOATS.				
Best Angora buck	Emile Portal	San José	Billy 3d	$10 00
SWINE.				
Best Berkshire boar	Tyler Beach	San José	Waldo	$5 00
Best Berkshire sow	Mrs. M. E. Bradley	San José	Lizzie 1st	$5 00
Best five pigs, any breed, under six months	Tyler Beach	San José		$5 00
Finest and fattest hog	Tyler Beach	San José	Fatty	$5 00
Best Essex sow	P. H. Doyle	Santa Clara	English Betsey	$5 00
POULTRY.				
Best trio Brahmas	T. J. Waite	Brighton		$2 50
Best trio Cochins	T. J. Waite	Brighton		$2 50
Best trio Hamburgs	T. J. Waite	Brighton		$2 50
Best trio Leghorns	O. J. Albee	Santa Clara		$2 50
Best trio Plymouth Rocks	T. J. Waite	Brighton		$2 50
Best trio Bantams	T. J. Waite	Brighton		$2 50
Best trio Langshans	Mrs. S. Newhall	San José		$2 50
Best trio Houdans	T. J. Waite	Brighton		$2 50
Best trio Seabrights	O. J. Albee	Santa Clara		$2 50
Best pair turkeys	T. Miles	Santa Clara		$5 00
Best pair geese	Louis Verdon	San José		$3 00
Best pair ducks	Mrs. S. Newhall	San José		$3 00

SECOND DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—AGRICULTURAL MACHINES, VEHICLES, ETC.			
Farmers' Union	San José	Best display of agricultural machines and implements	$20 00
Farmers' Union	San José	Best cider mill and press	$2 00
A. S. Babcock & Co.	San José	Best horse hay rake	$3 00
A. S. Babcock & Co.	San José	Best hay and straw cutter	$2 00
Farmers' Union	San José	Best lawn mower	$2 00
Farmers' Union	San José	Best header	$10 00
A. S. Babcock & Co.	San José	Best grain sowing machine	$5 00
Farmers' Union	San José	Best self-binder and header	$5 00
Farmers' Union	San José	Best self-raking & reap. m'chine	$5 00
E. W. Mills	San José	Best Victor mowing machine	$5 00
Farmers' Union	San José	Best combined reaper & mower	Diploma
Farmers' Union	San José	Best dis. reap. & mow. machine	Diploma
Farmers' Union	San José	Best self-binder and harvester	$5 00
Farmers' Union	San José	Best harrow	$5 00
A. S. Babcock & Co.	San José	Best cultivator	$5 00
A. S. Babcock & Co.	San José	Best farm and road scraper	$5 00
G. H. McDonald & Co.	San José	Best centen. windmill & pump	$10 00
Daniel Dempsey	San Francisco	Best Ely Meeker fruit dryer	$5 00
Farmers' Union	San José	Best gang plow	$5 00
A. S. Babcock & Co.	San José	Best sidehill plow	$5 00
Farmers' Union	San José	Best sod plow	$5 00
Farmers' Union	San José	Best one-horse plow	$5 00
Farmers' Union	San José	Best plow for all purposes	Diploma
F. Jung	San José	Best two-horse family carriage	$10 00
A. S. Babcock & Co.	San José	Best one-horse family carriage	$5 00
A. S. Babcock & Co.	San José	Best top buggy	$5 00
Hatman & Normandin	San José	Best open buggy	$5 00
Hatman & Normandin	San José	Best two-seated open carriage	$7 50
A. S. Babcock & Co.	San José	Best farm wagon, general use	$10 00
H. Prindle	San José	Best spring market wagon	$5 00
W. T. Adel	San José	Best driving cart	$5 00
A. S. Babcock & Co.	San José	Best ladies' phaeton	$10 00
F. Jung	San José	Best exhibit carriage painting	$7 50
Farmers' Union	San José	Best reaping machine	$5 00

THIRD DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—TEXTILE FABRICS, NEEDLEWORK, ETC.			
Miss L. A. Dudley	San José	Crochet shawl	$2 00
Mrs. H. A. Leigh	San José	Lace work	$5 00
Miss Teresa Leigh	San José	Cotton embroidery	$5 00
O. J. Albee	Santa Clara	Lace bedspread and shams	Silver Cup
Mrs. D. R. Paddock	San José	Sheet shams	Silver Cup
Mrs. D. R. Paddock	San José	Ladies' underclothing	$5 00
Mrs. D. R. Paddock	San José	Calico patchwork quilt	$3 00
Mrs. D. R. Paddock	San José	Lady's dress	$5 00
Mrs. J. A. Hamilton	San José	Display of silk embroidery	$3 00
Miss Mary Branham	San José	Embroidery chair	$3 00
Miss Susie Rucker	San José	Sofa cushion	$2 00
Mrs. H. J. Smith	San José	Silk patchwork quilt	$6 00
Miss Lizzie H. Ogier	San José	Floor rug	Silver Cup
Miss Emma Zingg	San José	Tapestry work	Silver Cup

THIRD DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. L. C. Feeley	Patchen	Best knit bedspread	$3 00
Mrs. L. C. Feeley	Patchen	Best knit stockings, wool	$1 00
Mrs. L. C. Feeley	Patchen	Best gent's shirts	$2 00
Mrs. L. C. Feeley	Patchen	Best braided toilet set	Silver Goblet
Mrs. W. T. Adel	San José	Lamp mat	$1 00
Mrs. W. T. Adel	San José	Crochet shirt	Silver Cup
Mrs. S. H. Chase	San José	Floor rug	$2 00
Mrs. W. T. Adel	San José	Macrame lambrequin	$3 00
Mrs. D. R. Paddock	San José	Beaded work	$2 00
Mrs. W. H. Collins	San José	Display of silk embroidery	$5 00
Mrs. W. H. Collins	San José	Kensington embroidery	Silver Cup
Mrs. T. S. Montgomery	San José	Afghan for carriage	$5 00
CLASS II—SHELL, WAX, AND HAIR WORK, ETC.			
Miss S. J. Powell	Evergreen	Hair wreath	$5 00
Miss S. J. Powell	Evergreen	Worsted wreath	Silver Cup
Mrs. D. R. Paddock	San José	Hair flowers	$3 00
Mrs. Jackson Lewis	San José	Ornamental grasses	$2 00
Mrs. H. J. Smith	San José	Preserved natural flowers	$2 00
Miss Fannie Burnett	Milpitas	Feather flowers	Silver Cup
Mrs. L. C. Feeley	Patchen	Exhibit of moss work	$3 00
Mrs. L. C. Feeley	Patchen	Exhibit of frost work	Silver Cup
LIBERAL ARTS.			
A. W. Combs	San José	Exhibit of sculpture	Silver Medal

FOURTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—MANUFACTURES OF LEATHER, RUBBER, AND PAPER.			
C. J. Heyler & Co.	San José	Display men's boots, shoes, etc.	$3 00
C. J. Heyler & Co.	San José	Display ladies' boots, shoes, etc.	$3 00
CLASS II—WORKED METALS.			
Boyce & Topham	Milpitas	One set of horseshoes	$3 00
CLASS IV—MUSICAL INSTRUMENTS.			
Denne & Co.	San José	Display of musical instruments	$15 00
Denne & Co.	San José	Upright piano	Silver Medal
Denne & Co.	San José	Square piano	Silver Medal
Wm. Braden	San José	Display of guitars, homemade	Diploma
H. Laurilliard	San José	Organ	Silver Medal
CLASS V—FURNITURE.			
F. Cain	San José	Extension table	$3 00
F. Cain	San José	Parlor furniture	$5 00
F. Cain	San José	Spring bed	$5 00
F. Cain	San José	Set of bedroom furniture	$5 00
F. Cain	San José	Display of furniture	Silver Medal
F. Cain	San José	Display of upholstery	$5 00
T. S. Clark & Son	San Francisco	Spring bed	Diploma
T. S. Clark & Son	San Francisco	Spring mattresses	$5 00
T. S. Clark & Son	San Francisco	Display of gaspipe bedsteads	Diploma
CLASS VI.			
Denne & Co.	San José	Gilt frames	Diploma

FOURTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
E. M. Ramer	San José	Brooms	Silver Medal
Morris M. Bruce	San José	Wood carving	Diploma
Morris M. Bruce	San José	Sample of scroll sawing	Diploma
CLASS IX—MARBLE AND GRANITE WORK.			
A. W. Combs	San José	Exhibit of sculpture work in marble	$10 00
A. W. Combs	San José	Marble work	$10 00

FIFTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS II.			
G. V. Bennett	San José	Sample of wheat	$2 00
Thomas Barkway	San José	Exhibit of corn	$2 00
Frank Hamilton	San José	Sample of barley	$2 00
CLASS III — VEGETABLES, ROOTS, ETC.			
Geo. Roop	Santa Clara	Pumpkin	$2 00
D. E. Gish	San José	Red potatoes	$2 00
Thomas Barkway	San José	Squash	$2 00
Thomas Barkway	San José	Beets	$2 00
Mrs. T. H. Laine	Santa Clara	Tomatoes	$2 00
CLASS IV—PLANTS AND FLOWERS.			
R. D. Fox	San José	Collection of greenhouse plants	Gold Medal
R. D. Fox	San José	Hardy ornam'l evergreen plants	$10 00
R. D. Fox	San José	Display of cut roses and dahlias	$5 00
CLASS V—DAIRY PRODUCTS.			
Santa Clara Cheese Manufacturing Company	Santa Clara	Cheese	$5 00
CLASS VI—BUTTER, BREAD, ETC.			
Mrs. C. D. Horne	Santa Clara	Corn bread	$2 00
Mrs. C. D. Horne	Santa Clara	Soda biscuit	$2 00
Mrs. T. H. Laine	Santa Clara	Butter	$5 00
Miss Mary Branham	Santa Clara	Domestic cakes	$2 00
Mrs. H. J. Smith	Santa Clara	Domestic brown bread	$2 00
Mrs. L. C. Feeley	Patchen	Wheat bread	$2 00
Mrs. L. C. Feeley	Patchen	Biscuit	$2 00
Frances A. Feeley	Patchen	Loaf of bread, made by a young lady under 18 years of age	$5 00
CLASS VII—LARD, HAMS, ETC.			
Andrews & Coykendall	San José	Exhibit of hams and bacon	$5 00
Andrews & Coykendall	San José	Salt pork	$2 00
Andrews & Coykendall	San José	Lard	$2 00
Andrews & Coykendall	San José	Corned beef	$2 00
Andrews & Coykendall	San José	Cured beef	$2 00

SIXTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—GREEN FRUIT.			
D. E. Gish	San José	Quinces	$3 00
Mrs. C. D. Horne	Santa Clara	Plums and prunes	$5 00
Mrs. C. D. Horne	Santa Clara	Peaches	$3 00
Dr. S. F. Chapin	San José	Apples	$5 00
Dr. S. F. Chapin	San José	Pears	$5 00
Dr. S. F. Chapin	San José	General display of fruits	$25 00
Fruit Growers' Association of Santa Cruz Mountains	Patchen	General display of fruits	Gold Medal
Mrs. W. T. Adel	San José	Japanese persimmons	Silver Cup
CLASS II—CANNED FRUITS.			
Mrs. C. D. Horne	Santa Clara	Exhibit of fruit hermetically sealed in glass	$5 00
Mrs. C. D. Horne	Santa Clara	Exhibit of sweet pickles	$3 00
Mrs. C. D. Horne	Santa Clara	Exhibit of sweet pickles	$3 00
CLASS III—DRIED FRUITS.			
Mrs. C. D. Horne	Santa Clara	Dried plums	$3 00
A. C. Penniman	San José	Dried apples	$3 00
A. C. Penniman	San José	Dried peaches	$3 00
A. C. Penniman	San José	Dried prunes	$3 00
A. C. Penniman	San José	General display of dried fruits	Silver Medal
W. W. Cozzens	San José	Dried apricots	$3 00
W. W. Cozzens	San José	Dried pears	$3 00
W. W. Cozzens	San José	Dried cherries	Diploma
O. J. Albee	Santa Clara	Dried pears	Diploma
CLASS IV—NUTS.			
Mrs. C. D. Horne	Santa Clara	Black walnuts	$2 00
Dr. S. F. Chapin	San José	Paper shell almonds	$2 00
Spencer & Covel	San José	Soft shell almonds	$2 00
Spencer & Covel	San José	Hard shell almonds	$2 00
CLASS V—GRAPES.			
J. B. J. Portal	San José	Variety of red wine grapes	Silver Medal
J. B. J. Portal	San José	Variety of white wine grapes	Silver Medal
Spencer & Covel	San José	Variety of raisin grapes	$5 00
Spencer & Covel	San José	Variety of table grapes	$5 00
Spencer & Covel	San José	General display of grapes	$10 00
Fruit Growers' Association of Santa Cruz Mountains	Patchen	General display of grapes	Gold Medal
CLASS VI--WINES AND BRANDIES.			
J. B. J. Portal	San José	Sample of red dry wine	Gold Medal
J. B. J. Portal	San José	Sample of white dry wine	$5 00
J. B. J. Portal	San José	Sample of sherry wine	$3 00
J. B. J. Portal	San José	General display of wines	Gold Medal
J. B. J. Portal	San José	Best display of brandy	Gold Medal
Capt. A. C. Merithew	San José	Display of wines	Silver Goblet

SEVENTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—FINE ARTS.			
Miss Flora Rivers	San José	Fruit painting	Silver Cup
Ellison Gish	San José	Crayon drawing	$3 00
E. A. Goddard	San Francisco	Pen drawings	$5 00
Loryea & McCauley	San José	Crayon portrait	$5 00
Loryea & McCauley	San José	India ink portrait	$5 00
Loryea & McCauley	San José	Retouched photographs	$5 00
Loryea & McCauley	San José	Best collection of photographs	$5 00
W. W. Wright	San José	Portrait in water colors	Gold Medal
W. W. Wright	San José	Painting in water colors	$5 00
W. W. Wright	San José	Photographic views	$5 00
Ed. B. Lewis	San José	Monochromatic drawing	$3 00
H. G. Peelor	San José	Perspective drawing	Silver Medal
H. G. Peelor	San José	Landscape painting	Silver Medal
Laurette Lovell	San José	Pencil drawing	Silver Goblet
Miss Annie Columbet	San José	Fruit painting	Silver Cup
Andrew P. Hill	San José	Painting in oil	$10 00
Andrew P. Hill	San José	Animal painting	$5 00
Andrew P. Hill	San José	Perspective drawing or paint'g	Gold Medal
Mrs. Mollie F. Hirsch	San José	Fruit painting	$5 00
Mrs. W. H. Collins	San José	Painting on china or tile	Silver Goblet
Mrs. W. H. Collins	San José	Flower painting	$5 00
Mrs. L. E. Bradley	San José	Flower painting on glass	$2 00
Miss Flora Rivers	San José	Painting on satin	$3 00
Mrs. M. Maze	San José	Flower painting	Silver Goblet
Elliott Reed	San José	Landscape painting	Silver Goblet
Mrs. L. M. Curtis	San José	General display of art	Gold Medal
MISCELLANEOUS.			
W. L. Dawson	San Francisco	Desiccated fruit	Diploma
Denne & Co.	San José	School desks	Diploma
Ashley Laine	Santa Clara	Collection of birds eggs	Silver Cup
Mrs. C. V. Turner	San José	Corsets	Diploma
Farmers' Union	San José	Exhibit of teas	Silver Medal
W. T. Coleman & Co.	San Francisco	Royal baking powder	Gold Medal
Wilmerding & Co.	San Francisco	Peruvian bitters	Gold Medal
Gunckel & Barker	San José	Dental work	Diploma
B. J. Rhodes & Co.	San José	Druggists' fancy goods	Gold Medal
H. C. Ahlers	San José	Fine diamond work	Diploma
Mrs. T. Roese	San José	Stuffed birds and animals	Silver Cup
B. F. Wellington	San Francisco	Perfect hatching incubator	Diploma
B. F. Wellington	San Francisco	Improved egg food	Diploma
T. S. Clark & Son	San Francisco	Park seat	Diploma
T. S. Clark & Son	San Francisco	Hotel cot	Diploma
T. S. Clark & Son	San Francisco	Camp cot	Diploma
T. S. Clark & Son	San Francisco	Wire coiling machine	Diploma
Mrs. C. V. Turner	San José	Pins and needles	Diploma
J. Kneedler	San José	Sunflowers	Special mention
Garden City Coffee Works	San José	Exhibit of coffee	Diploma
C. F. Tranley & Co.	San Francisco	Ex. of wall-paper show cards	Diploma

SPEED PROGRAMME

MONDAY, SEPTEMBER 25TH, 1882.

RACE NO. 1—TROTTING.

2:40 Class. Best three in five. Purse, five hundred dollars. First horse, three hundred dollars; second horse, one hundred and fifty dollars; third horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Manon, by Nutwood; dam, Addie	C. Van Buren	Mayfield
Louis D.; pedigree not given	Louis Duncan	Santa Clara
Allan Ray; pedigree unknown	G. Bernard	San Francisco
San Mateo Belle, by Speculation	W. B. Price	San Mateo
Marin, by Patchen; dam, unknown	B. T. Miller	San Rafael
Big Lize; pedigree unknown	W. H. Henderson	San José
Frank Mosco, by Frank Mosco	H. B. Cooper	Alameda
Vanderlynn, by Geo. M. Patchen	Pat. Farrell	San Francisco
Freestone, by Capt. Webster; dam, Owen Dale	Mart. Rollins	San Francisco
Edwin Forrest, by Blackbird	John McIntyre	Sacramento
Rowdy Boy, by Rustic	James Garland	Oakland

Position at Starting.	*Position at Close.*			
1. Frank Mosco	Manon	1	1	1
2. Big Lize	Vanderlynn	2	3	2
3. Vanderlynn	Frank Mosco	3	4	3
4. Manon	Big Lize	4	2	dis.

Time—2:25¾; 2:26; 2:25.

RACE NO. 2—TROTTING.

2:25 Class. Best three in five. Purse, seven hundred and fifty dollars. First horse, four hundred and fifty dollars; second horse, two hundred and twenty-five dollars; third horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Crown Point, by Speculation; dam, Young Martha	G. Valensin	Arno Station
Echora, by Echo; dam, Young mare	L. N. Titus	San Gabriel
Cairo, by Chieftain; dam, by Odd Fellow	John Hughes	San Francisco
Capt. Smith, by Locomotive; dam, Maid of Day	Palo Alto Stock Farm	Mayfield
Del Sur, by The Moor; dam, Gretchen	L. J. Rose	San Gabriel
Ashley, by Plumas; dam, by George	Jackson Cochran	Chico
Starr King, by Geo. M. Patchen, Jr.; dam, Mary Wonder	C. W. Welby	San Francisco
Director, by Dictator; dam, Mambrinus Chief	John A. Goldsmith	Oakland

Position at Starting.	*Position at Close.*			
1. Cairo	Director	1	1	1
2. Starr King	Cairo	2	3	2
3. Director	Starr King	3	2	3

Time—2:28¼; 2:26; 2:24½.

TUESDAY, SEPTEMBER 26TH, 1882.

RACE NO. 3—RUNNING.

Two-year-olds. Three quarters mile dash. Fifty dollars entrance; fifteen dollars forfeit; one hundred and fifty dollars added. Second horse to receive his entrance and one third of added money.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Augusta E., by Monday	Geo. Howson	Sacramento
Satanella, by Leveler; dam, Frou Frou	Palo Alto Stock Farm	Mayfield
Bryant W., by Monday; dam, Bet	T. H. Williams	Stockton
Panama, by Shannon; dam, Abbie W.	C. Van Buren	Mayfield
Flou Flou, by Monday; dam, Jennie C.	C. Van Buren	Mayfield

Walk-over for Augusta E.

RACE NO. 4—RUNNING.

One mile dash. For all ages. Fifty dollars entrance; fifteen dollars forfeit; one hundred and twenty-five dollars added. Second horse to receive his entrance and one third of added money.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred Collier, by Joe Hooker; dam, Puss, by Norfolk	Stemler & Ayres	Portland
Joe Howell, by Bonnie Scotland	Stemler & Ayres	Portland
Jim Douglass, by Wildidle	Geo. Howson	Sacramento
Bob, by Bob Wooding; dam, Gladiola, by Norfolk	Wm. Boots	San José
May D., by Wildidle; dam, Nettie Brown, by Rifleman	J. & H. C. Judson	Santa Clara
Forest King, by Monday; dam, Abbie	C. Van Buren	Mayfield
Night Hawk, by imp. Haddington; dam, by Norfolk	P. J. Shafter	Olema
Joe Daniels, Jr., by Joe Daniels; dam, by Woodburn	John Green	Sacramento
Red Boy, by War Dance; dam, imp. Neilson	J. F. Gilmer	Salt Lake

Position at Starting.	*Position at Close.*	
1. May D.	Jim Douglass	1
2. Jim Douglass	May D.	2
3. Bob	Night Hawk	3
4. Night Hawk	Bob	4

Time—1:43½.

RACE NO. 5—RUNNING—SELLING.

Purse, two hundred dollars. One mile heats, best two in three. First horse, one hundred and twenty-five dollars; second horse, seventy-five dollars. Entrance, five per cent to third horse. Horses to be sold for one thousand dollars, to carry entitled weight, two pounds off for each one hundred dollars under fixed valuation.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jack Douglass, by Wildidle; valuation, $500	John Cardinell	San Francisco
Geo. Bender; dam, Sugar Plum; valuation, $500	Seth Peyton	Stockton
Belshaw; dam, Susie W., by Wildidle; val., $400	J. & H. C. Judson	Santa Clara
Haddington, by imp. Haddington; dam, by Norfolk; val., $800	P. J. Shafter	Olema
Euchre, by Leinster; dam, Flush; val., $500	J. F. Gilmer	Salt Lake
Joe Howell, by Bonnie Scotland; val., $500	Stemler & Ayres	Portland

RACE NO. 5—Continued.

Position at Starting.	*Position at Close.*		
1. Belshaw	Belshaw	1	1
2. Geo. Bender	Haddington	3	2
3. Haddington	Geo. Bender	2	dis.

Time—1:47¼; 1:43.

WEDNESDAY, SEPTEMBER 27TH, 1882.

RACE NO. 6—TROTTING.

2:30 Class. Mile heats, best three in five. Purse, four hundred dollars. First horse, two hundred and forty dollars; second horse, one hundred and twenty dollars; third horse, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Nellie R., by Gen. McClellan, Jr.	S. Sperry	Petaluma
Tump Winston (formerly Kent), by Plumas; dam, Ledger	E. Mora	Carson City
Poscora Hayward, by Billy Hayward	H. D. Hammond	Oakland
Sweetness, by Volunteer; dam, by Edward Everett	John A. Goldsmith	Oakland

Position at Starting.	*Position at Close.*					
1. Nellie R.	Nellie R.	2	2	1	1	1
2. Sweetness	Sweetness	1	1	2	2	2

Time—2:24; 2:24; 2:22¾; 2:29; 2:34.

RACE NO. 7—TROTTING.

Mile heats, best three in five. Purse, three hundred dollars. First horse, two hundred dollars; second horse, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ashley, by Plumas; dam, by George	P. Brandow	San Francisco
Frank Mosco, by Mosco; dam, unknown	H. B. Cooper	Alameda

Position at Starting.	*Position at Close.*					
1. Frank Mosco	Frank Mosco	2	2	1	1	1
2. Ashley	Ashley	1	1	2	2	2

Time—2:35¼; 2:33¾; 2:35¼; 2:30½; 2:34½.

THURSDAY, SEPTEMBER 28TH, 1882.

RACE NO. 8—RUNNING.

Three-year-olds. One and one eighth mile dash. Fifty dollars entrance; fifteen dollars forfeit; one hundred and seventy-five dollars added. Second horse to receive his entrance and one third of added money.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Inauguration, by Wildidle; dam, Miami, by Norfolk	Wm. Boots	San José
Patrol, by Wildidle; dam, Nettie Brown, by Rifleman	J. & H. C. Judson	Santa Clara
Fostress, by Foster; dam, Planetia, by Planet	Palo Alto Stock Farm	Mayfield
Reel Terry, by California	T. H. Williams	Stockton
Forest King, by Monday; dam, Abbie W.	C. Van Buren	Mayfield
Myra F., by Leinster; dam, Flush	Geo. Hearst	San Francisco
Duke of Monday, by Monday	Geo. Hearst	San Francisco

Position at Starting.	*Position at Close.*	
1. Forest King	Patrol	1
2. Patrol	Forest King	2

Time—2:02.

RACE NO. 9—PACING.

Mile heats, best three in five. Purse, three hundred dollars. First horse, one hundred and eighty dollars; second horse, ninety dollars; third horse, thirty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Oakland Boy, by Winthrop	A. L. Hinds	Oakland
Lady Hayes, by Hiram Tracy	E. S. Dennison	Oakland
Washington, by Bucephalus; dam, by Red Fox	H. A. Van Amryage	Oakland
Corette, by Winthrop	L. E. Yates	Oakland
Johnny Weigle, unknown	Walter Mead	San Francisco

Position at Starting.	*Position at Close.*			
1. Washington	Corette	1	1	1
2. Johnny Weigle	Johnny Weigle	2	2	2
3. Corette	Washington	3	3	3

Time—2:24; 2:26¼; 2:34¾.

RACE NO. 10—TROTTING.

2:36 Class. Mile heats, best three in five. Purse, four hundred dollars. First horse, two hundred and forty dollars; second horse, one hundred and twenty dollars; third horse, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Revolution, by Prince of Orange	G. W. Trahern	Stockton
Louis D.	Louis Duncan	Santa Clara
Pauline, by Nanhuc	H. G. Cox	Oakland
Eddie F., by Geo. M. Patchen, Jr.	P. A. Finigan	San Francisco
James Lick	H. W. Meek	Haywards
Manon, by Nutwood	C. Van Buren	Mayfield
Blanche, by Gray McClellan	Steve Crandall	Santa Rosa
San Mateo Belle, by Speculation	W. Z. Price	San Mateo
Rowdy Boy, by Rustic; dam, Belmont	James Garland	Oakland

Walk-over for Manon.

FRIDAY, SEPTEMBER 29TH, 1882.

RACE NO. 11—RUNNING.

One and a half mile dash. Entrance, fifty dollars; forfeit, fifteen dollars; two hundred dollars added. Second horse to receive his entrance and one third of added money.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred Collier, by Joe Hooker; dam, Puss, by Norfolk	Stemler & Ayres	Portland
Jack Douglass, by Wildidle	John Cardinell	San Francisco
George Bender; dam, Sugar Plum; sire, unknown	Seth Peyton	Stockton
Mollie H., by Wildidle; dam, Mamie Hall	Wm. Boots	San José
May D., by Wildidle; dam, Nettie Brown, by Rifleman	J. & H. C. Judson	Santa Clara
Precious, by Lever; dam, Frolic, by Thunder	Palo Alto Stock Farm	Mayfield
Night Hawk, by imported Haddington; dam, by Norfolk	P. J. Shafter	Olema
Red Boy, by War Dance; dam, imported Neilson	J. F. Gilmer	Salt Lake
Myra, by Leinster; dam, Flush	George Hearst	San Francisco

Position at Starting.	*Position at Close.*	
1. Night Hawk	May D.	1
2. May D.	Night Hawk	2

Time—2:36.

SPECIAL RACE.

Special race against time. To beat 1:42¼, for the Society's Gold Medal.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Belshaw, by Wildidle; dam, Susie W.	J. & H. C. Judson	Santa Clara

Time—1:42¾.

RACE NO. 12—RUNNING.

Special Race. Three fourths mile and repeat. Purse, one hundred and fifty dollars. First horse, one hundred dollars; second horse, fifty dollars; entrance, five per cent, to third horse.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Forest King, by Monday; dam, Abbie W.	C. Van Buren	Mayfield
Haddington, by imported Haddington	P. J. Shafter	Olema
Jim Douglass, by Wildidle	George Howson	Sacramento
Ella Doane, by Wildidle	J. & H. C. Judson	Santa Clara

Position at Starting.	*Position at Close.*				
1. Jim Douglass	Haddington	4	4	1	1
2. Haddington	Ella Doane	1	2	4	2
3. Forest King	Jim Douglass	3	1	3	3
4. Ella Doane	Forest King	2	3	2	dr.

Time—1:15½; 1:17; 1:16¾; 1:18¼.

Race No. 13—Trotting.

Special Race. Mile heats, best three in five. Purse, three hundred dollars. First horse, two hundred dollars; second horse, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Starr King, by George M. Patchen	C. W. Welby	San Francisco
Cairo, by Chieftain	P. Farrell	San Francisco

Position at Starting.	*Position at Close.*				
1. Starr King	Starr King	1	2	1	1
2. Cairo	Cairo	2	1	2	2

Time—2:27; 2:41½; 2:25½; 2:25¾.

SATURDAY, SEPTEMBER 30TH, 1882.

Race No. 14—Trotting.

Mile heats, best three in five. Purse, seven hundred and fifty dollars. First horse, tour hundred and fifty dollars; second horse, two hundred and twenty-five dollars; third horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Belle Echo, by Echo; dam, by Belmont	L. H. Titus	San Gabriel
Brigadier, by Happy Medium	J. B. McDonald	Marysville
Ashley, by Plumas; dam, by George	Jackson Cochran	Chico
Romero, by A. W. Richmond; dam, by Mambrino Pilot	John A. Goldsmith	Oakland

Walk-over for Ashley.

MONDAY, OCTOBER 2D.

Race No. 15—Trotting.

2:30 Class. Two miles and repeat. Purse, five hundred dollars. First horse, three hundred dollars; second horse, one hundred and fifty dollars; third horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Bullet, by Echo; dam, unknown	L. H. Titus	San Gabriel
Vanderlynn, by George M. Patchen	Patrick Farrell	San Francisco
Freestone, by Captain Webster	Mart Rollins	San Francisco
Tump Winston	E. Mora	Carson City
Albert W., by Electioneer; dam, by John Nelson	A. Waldstein	San Francisco

Position at Starting.	*Position at Close.*		
1. Vanderlynn	Albert W.	1	1
2. Albert W.	Vanderlynn	2	2

Time—5:04¾; 4:51.

RACE NO. 16—TROTTING.

Buggy Horse Race. Two miles out. Purse, one hundred dollars. First horse, seventy dollars; second horse, thirty dollars; third horse, silver pitcher. For horses without a record, to be driven by owners to buggy.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
	Horace Hawes	Redwood City
Tom	A. Saunders	San José
Nellie H.	Walter Hollenbeck	San José
Little Sam	F. L. Dunean	San José
Prince	Martin & Carrick	Calaver's Valley
Nig	J. D. Roberts	

Position at Starting.		*Position at Close.*	
1.	Nig	Tom	1
2.	Little Sam		2
3.	Nellie H.	Little Sam	3
4.	Prince	Nig	4
5.		Nellie H.	5
6.	Tom	Prince	6

TRANSACTIONS

OF THE

SIXTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of Los Angeles, San Diego, San Bernardino,
Santa Barbara, Ventura, and Inyo.

OFFICERS OF THE ASSOCIATION.

F. J. BARRETTO	President
R. H. HEWITT	Secretary
E. F. SPENCE	Treasurer

DIRECTORS.

F. J. BARRETTO	Downey
ELLWOOD COOPER	Santa Barbara
L. LICHTENBERGER	Los Angeles
O. W. CHILDS	Los Angeles
J. E. HOLLENBECK	Los Angeles
WILLIAM NILES	Los Angeles
J. W. WATERS	San Bernardino
L. H. TITUS	San Gabriel

REPORT.

Los Angeles, January 1, 1883.

To the honorable the State Board of Agriculture:

Gentlemen: The Directors of the Sixth District Agricultural Association submit this their report of the transactions of said Association for the year ending this date.

R. H. HEWITT, Secretary.

RECEIPTS AND DISBURSEMENTS.

Receipts.

By cash from Citizens' Committee	$2,455 00	
By cash from State	1,200 00	
By cash from gates, including exhibitors tickets and grand stand	3,025 00	
By cash from pools	481 75	
By cash from privileges	375 00	
By cash from ten per cent on purses	1,304 00	
By cash from sales of materials	18 00	
By cash from sale of pavilion	500 00	
By cash from miscellaneous sources	400 05	
		$9,758 80

Disbursements.

To cash paid purses	$3,920 00	
To cash paid premiums	1,289 00	
To cash paid for music, park and pavilion	200 00	
To cash paid discount and charges on $1,200	23 00	
To cash paid for lumber	313 56	
To cash paid Secretary and Superintendent	375 00	
To cash paid for erection of pavilion	1,406 00	
To cash paid for band wagon and livery	66 00	
To cash paid for printing and advertising	852 15	
To cash paid for sundry vouchers	624 23	
To cash paid for city taxes, 1882-3	9 17	
To cash paid for county taxes, 1882-3	140 00	
		$9,218 11

RECAPITULATION.

Total receipts	$9,758 80
Total disbursed, as per vouchers	9,218 11
Balance in treasury	$ 540 69

EXPENDITURES.

1882.			
Oct. 2—	J. B. Kennedy, repairs and labor at park	$ 30	00
	F. J. Holbrook, water pipe at park	14	50
	F. E. Browne, repairs of range at park	19	00
	R. H. Hewitt, account of salary	100	00
	F. J. Baretto, sundry expenses advanced	20	65
12—	W. O. Burr, contract, building pavilion	1,406	00
18—	J. W. Adams, race money, No. 3	133	67
	Hill & Gries, second money, race No. 3	66	33
19—	Hill & Gries, full money, race No. 6	250	00
	John Reynolds, third money, race No. 4	50	00
	F. Sepulveda, second money, race No. 5	81	67
	J. D. Collins, labor at park	8	80
20—	Miss Addie McCoy, second money, fifteen-mile race	100	00
	John F. Manning, gas fixtures at pavilion	75	50
	Mrs. Isabella Blacklaw, first money, fifteen-mile race	175	00
	J. W. Adams, first money, race No. 9	132	97
	Hill & Gries, second money, race No. 9	67	00
	E. L. Mayberry, purses	450	00
	J. Machado, first money, fifty-mile race	250	00
21—	L. H. Titus, purses	170	00
	Hill & Gries, purses	316	66
	Louis Neely, gate-keeper	10	00
	John Shaw, labor at night at park	7	00
	Thomas Atwell, gate-keeper at main gate	20	00
	James Sproal, gate-keeper at side gate	15	00
	John Cully, labor at park and pavilion	27	00
	C. H. Richardson, ticket agent	27	00
	George B. Griffin, entry clerk, pavilion	26	00
	S. L. Pritchard, entry clerk, park	10	00
	F. M. Curran, gate-keeper	10	00
24—	E. T. McGinness, account of expenses	10	00
	F. Estudillo, purses	116	66
	C. L. Cruz, quarter-stretch gate	15	00
	Santiago Arguello, mounted guard	5	00
	L. H. Lyon, labor at pavilion	28	50
	J. W. Griffin, quarter-stretch gate	15	00
	F. McLaughlin, gate-keeper	15	00
	S. H. Purcell, advertising	15	00
	J. A. Cline, gate-keeper, and lighting pavilion	16	50
	Russell Morgan & Co., Cincinnati, posters	40	00
	L. H. Cook, clerk at Judges' stand	12	00
	W. J. Brodrick, insurance	42	00
	E. A. DeCamp, Marshal	45	00
	J. Cowper, third money in special race	20	00
	A. E. Whistler, labor at pavilion	12	00
26—	Charles Eddy, carpenter labor	56	25
	W. O. Burr, lumber	41	61
	Los Angeles City Band, music	200	00
	J. Weinholdt, plants and flowers at pavilion	20	00
	Charles Smith, Secretary in 1881	10	00
	H. R. Brown, rent of small showcase	5	00
	Northcraft & Clark, rent of small showcase	5	00
	John C. Bell, labor at pavilion	33	00
	John C. Bell, labor at pavilion	17	00
	J. F. Holmes, watchman	20	00
	B. Stuyvesant	10	00
	J. S. Mills, services at pavilion	25	00
	J. R. Umstead, services at pavilion	19	00
	N. Levering, superintendent of honey department	18	00
	John C. Brown, services at pavilion	27	00
	S. D. Barber, services at pavilion	12	50
	J. H. Huddleson, ticket agent at park	15	00
	Dalton Wheeler, ticket agent at park	17	50
	Geo. E. Place, entry clerk	33	00
	F. Houseman, care of floral department	16	50
	J. C. Peabody, canvassing, etc.	52	00
	B. A. Stephens, ticket agent	17	50
	A. Melhorne, drayage	15	00
	S. Hellman, stationery	6	20
	T. A. Garey, labor and canvassing	82	00

Oct. 26	Phil. Hirschfield, stationery	$ 22 23
	Wm. Lloyd, making blackboard	3 75
	C. W. Gibson, lamp	75
	San Francisco Spirit of the Times, advertising	80 00
	Dillon & Kenealy, materials	27 05
	J. C. Saulsbury, coal, park engine	11 00
	Herald, advertising and printing	59 50
	Evening Express, advertising and printing	60 90
	Eugene Meyer & Co., materials	56 40
	M. Leonard, night watchman	25 00
	H. H. Spencer, labor at pavilion	24 00
	Josh Talbot, night watchman	8 00
	Sud. California Post, advertising	10 00
	La Union, advertising	10 00
	R. Y. McBride, printing	10 25
	Santa Ana Herald, advertising	5 00
	Anaheim Gazette, advertising	5 00
	Evening Telegram, advertising	10 00
	Press and Horticulturist, advertising	10 00
	Commercial, advertising	34 50
	P. J. Marley, printing badges	6 00
	W. W. & S. A. Widney, materials	6 40
	N. Levering, advertising	7 50
	Madam Mana, music	5 00
	J. D. Knell, music	5 00
	J. E. Fisk, music	10 00
	A. S. Abernethy, music	25 00
	F. Arevallo, music	5 00
	Los Angeles Gas Company, gas connection	16 00
	Los Angeles Gas Company, gas	25 20
	Los Angeles Water Company, water	5 00
	Los Angeles Water Company, water connection	12 00
	Rural Californian, advertising	10 00
	John Gomez, labor at park	28 00
	Perry Woodworth & Co., sawdust	7 40
	R. Bills & Co., drayage	1 50
	V. Assovatia, keeper at Club House	10 00
	George Smith, second money in race No. 7	105 00
	W. H. Brooks, labor	16 00
	Wm. Cotton, labor and doorkeeper at pavilion	39 00
	C. B. Tennial, ticket agent	6 00
	W. R. Norton, architectural plans	35 15
	R. H. Hewitt, on account of salary	250 00
	James Wansoich, hauling straw	48 00
	Bryson & Son, lumber	194 35
	J. M. Griffith & Co., lumber	52 77
	Henry Ortlepp, ticket clerk	18 00
	La Cronica, advertising	10 00
	G. H. Denis, clerk at park	15 00
	Harper, Reynolds & Co., hardware	29 64
	Santa Ana Standard, advertising	15 00
Nov. 1	Perry & Pollard, plumbing	11 70
	C. Wagner, drayage	1 50
	Semi-Tropic California, advertising	20 00
	Henderson & Marshall, hardware	8 64
	Sam. Meyer, use of crockery	4 00
	M. W. Childs, hardware, bill of 1881	2 70
	J. D. Gilchrist, printing	40 25
	W. C. Funey, hardware	21 79
	Times and Mirror, advertising and printing	76 25
	L. J. Rose, purses in races	540 00
	San Bernardino Times, advertising	5 00
	San Bernardino Index, advertising	6 00
3	Tom Bedford, services at park	3 00
23	N. A. Covarrubias, purses in races	551 81
	Thomas Strohm, hardware	7 40
	Wm. Niles, entry fee returned	5 00
	Wm. Ferguson, use of band wagon	40 00
	B. F. Coulter, merchandise	11 19
	Charles J. Eddy, labor	10 00
	George E. Place, services	25 50
	J. H. Creal, sinking well at park	20 00
	M. S. Baker & Co., foundry work	19 60
	Wm. Ferguson, on account of livery	26 00

OPENING ADDRESS.

By F. J. BARRETTO, President.

Ladies and Gentlemen: It gives me much pleasure to meet you here this evening, being the opening of the third annual exhibition of the District Agricultural Association No. 6. In addressing you one year since, upon a similar occasion, my closing words to you were these: "Should I ever again be called upon to address a Los Angeles audience upon the subject of agriculture, may I then have cause to thank you for the interest you take in agricultural associations and for the liberality you display towards their support." That occasion has now arrived, and with pride and pleasure I have the privilege of thanking many of our prominent citizens for their liberal subscriptions to a fund to be used in defraying the expenses of this exhibition. Last year, owing to a peculiar condition of circumstances and a very great lack of attendance at the Park and at our Horticultural Hall, our Fair, financially, was not a success. After paying our premiums, purses, and bills incident to the exhibition, there was a deficiency, which had to be contributed by the six Directors residing in this city, whereby all liabilities against the Association were liquidated, and I am happy to say that the institution is out of debt. In August last, in order to ascertain the disposition of the citizens of Los Angeles towards the holding of our expositions in this city and what financial assistance we might expect from them, we called a meeting of the citizens. This meeting was largely attended, and much enthusiasm upon the subject was evinced. A subscription committee was appointed, the labors of which have met with very satisfactory results, and the Directors of the Association were encouraged to make arrangements for a Fair which, I believe, will equal, if it does not excel, any similar exhibition ever held in Southern California. At the Park, the grounds and track have been put in the best of order. We have offered liberal purses and premiums, in order to create a competition in every department, and, as a consequence, our stables and sheds, though spacious, and always heretofore quite equal to all demands made upon them, are now more than filled, and we have been obliged to make extensive additions to them in order to accommodate the horses, cattle, and stock of all kinds which has been brought here for exhibition or to compete in the races. The purses which we advertised in our speed programme have been fully filled, in several instances there being six or seven competitors, and there is no doubt of many close contests.

I beg to call your attention to two interesting events which are to come off during the week, one of which is our ladies' ride of ten miles, which will be run on Thursday. This race necessitates the changing of many horses. It has been filled with three entries, and will be a very exciting contest. A similar event at the St. Louis Fair this Summer drew together sixty-five thousand people. Another good race will be the Californian race, on Friday—a distance of fifty miles—which will be contested by two riders, each running ten horses. Both of these races will no doubt be closely contested, and should be well patronized by the public. So much for the arrangements at the Park. I shall detain you a few moments with the horticultural department. Our chief difficulty has been in obtaining a building suitable for this display. Last year, as you may remember, we occupied Turn Verein Hall, and again wished to lease that building, but, upon application, we found that it had long before been rented for this week for other purposes. We then made application in various directions, but could obtain nothing suitable to our purpose, and were therefore obliged, at considerable expense, to put up this temporary building, which, though large, is quite inadequate to the demands made upon us for space. We have here to-night a very creditable horticultural display, comprising varieties of fruits, vegetables, and grains indigenous to every clime, and which, I believe, can be found in such luxuriance upon no spot on the face of the earth but in Southern California. There are also on exhibition here many mechanical products, as well as articles of art, well worthy of our attention. And last, though by no means least, provision has been made for an extra-fine baby show, or perhaps I should say, for a show of extra-fine babies. This will come off on Thursday afternoon, in this building, and promises to create a very lively contest.

Ladies and gentlemen, I have stated to you as concisely as possible what the Directors of this institution have been doing for your entertainment, and also for the benefit and welfare of this Association. We have devoted much time and labor to this enterprise, and have expended money upon such things as we believed could add to the pleasure and enjoyment of all. And there is but one thing now which is needed to assure a most glorious success, and that is a good attendance. This, my friends, depends upon you. The Directors have done their part. Many of the citizens of this city have contributed their money liberally. The owners of horses, cattle, and all descriptions of stock, also fruits, grains, and all manufactures, representing the varied interests of this district, have come forward and done each their part towards making this exhibition a success, and a credit to the district in which it is located, and it is to be hoped that the inhabitants of this city, and of the entire district, will stand by us, and encourage us by a large and generous attendance every day and every evening this week.

HOW I WENT TO THE FAIR.

A POEM, WRITTEN AND READ BY J. C. SHEARER, AT THE PAVILION, ON TUESDAY EVENING, OCTOBER 17, 1882.

Last night, with a glorious bill of fare,
Of the choicest dainties a cook can prepare
With his magic touch, temptation was such,
That I yielded to it, and—ate too much!

Still we didn't have much—a chowder of clams,
And a beef's tongue cold, with a brace of lambs
That we got quite cheap (for they wouldn't keep
An age or more without growing to sheep),

A tripe fricassee and a fillet of veal,
Corned beef on toast, and a salt-water eel,
And an onion stew; other dishes a few,
Such as epicures love, and a roast or two.

Of all these rare dainties I freely ate
With an appetite keen. The hour was late
When my bed I sought, and my sleep was fraught
With the visions dire that my poor brain wrought

From that inspiration which too much dinner
Will lend to the most prosaic sinner.
The creatures I saw, from toe-nail to jaw,
Were built to inspire the sublimest awe!

And so they did, for with reason o'erthrown,
I sailed through space to the realms unknown,
To demons' abode, in a curious mode,
For 'twas out on a nightmare's back I rode!

I dreamed I roamed in a redwood hall,
Where products of Ceres adorned the wall,
And the roof was hung with etceteras strung
The beams and rafters and shingles among.

And around the sides was tier upon tier,
With the garnered products of all the year
Upon them displayed, and I stood dismayed,
Awe-struck and trembling, and sore afraid!

For it seemed unto my disordered brain
That each luscious fruit, and each stock of grain
Was a living thing, and I saw them spring
And then dance about, and so wildly sing

That the very rafters bending o'er us
Were forced to join in the magic chorus
Of the demon throng, and with voice of song
A fantastic procession swept along.

A fantastic procession! whose head and chief
I perceived, with somewhat doubtful relief,
Was an old, old friend—one of those who lend
Their charming presence to the hours we spend

At the festive board, with appearance quaint,
As solemn and stately as a saint,
Yet a rakish air, that seemed to declare
"I've just stepped in to run the Fair!"

Side by side with a jolly tomato
Stalked the rotund gigantic potato!
As they marched along, the words of a song
Rang out through the hall distinct and strong—

A rhythmical measure, but sweet, withal,
The whole of which I cannot recall,
But the quaint refrain in my muddled brain
Rings ever more its melodious strain:

"O the spud, the spud, the glorious spud!
Good for the brain and good for the blood,
Of the hungry man. Oh, show, if you can,
The peer of the spud since the world began!"

And when the potato had passed along,
Hushed for a time was the voice of song
That had been so gay, and I heard one say,
"Now something funereal comes this way."

Marching along alone in the column,
In silken attire, with aspect solemn,
Surrounded by gloom and a faint perfume,
The odorous onion came into the room;

And after him in most gorgeous array
A prodigious pumpkin, with aspect gay
And a rolling eye, went galloping by,
Flanked on each side by a mammoth pie—

And they chanted this lay, "Long live the pie
Of the frigid East! may it never die!
But with pork and beans, and various greens,
Continue the pride of all festive scenes."

Then came the form of a beet that had grown
Within the prolific artesian zone
To wonderful size, and its gleaming eyes
Expressed an intention to snatch the prize.

Then the cucumber came, devoid of grace,
With a mocking sneer on his demon face,
And an aspect rough—then gaily enough
Marched up a collection of garden stuff.

Ah, here, thinks I, is the inspiration
For poet who feasts on anticipation,
For salads and stews, such as housewives use—
The trouble here only is what to choose!

When cabbage and parsnip, carrot and all,
Had gaily paraded through the wide hall,
And all disappeared, the atmosphere cleared,
And Flora, queen of the flowers, appeared.

The air was sweet with the rose's perfume,
The breath of violets filled the room,
The daisy so shy, with twinkling eye,
And sunflower æsthetic, went waltzing by.

Then came the car of Pomona, the maid,
Whose kingdom is found 'neath the fruit trees shade,
And whose devotee you especially see
In the man who dotes on the apple tree.

And all the fruits that were ever known
In frigid, torrid, or temperate zone,
Were before my eyes, and to my surprise
(And you are to judge what it implies),

Each separate fruit a diploma wore,
Which in letters of gold this legend bore:
"Of glory, my share is to grow with care,
And capture the prize at the County Fair."

I was just beginning to feel at home,
And enjoy the show, when from pit to dome,
A terrific shout through the hall rang out
And put the processionists all to route!

A sound of laughter and a voice of song,
A tumultuous crowd that rushed along
Like a swelling tide, while a herald cried,
"Ho! Bacchus is coming, now stand aside."

Then came the King, with the jolliest crowd
That Heaven has ever with lungs endowed,
Of Bacchus divine and the blood red wine
And praise of the generous gifts of the vine.

They sang so loudly, that the nightmare fled
And carried me back to my downy bed!
Now, I don't believe that it's worth my while
To wind this up in a moral style.

But if you can see it, the moral is there,
If you want to win entrance free to a fair,
If the requisite coin in your purse you lack,
Just ride straight in on a nightmare's back!

THE ANNUAL ADDRESS.

BY JUDGE A. BRUNSON.

Mr. President, Ladies and Gentlemen: Last week when I was invited to address you at this time, I was told that I would not be expected nor would I be wanted to make any learned dissertation upon the scientific process of grafting apple trees, or the most approved method of raising mammoth pumpkins, but, limited to a quarter of an hour, I would only be tolerated when indulging in glittering generalities.

I thought then, as I think now, that this was a great mistake, for if there is any one subject with which I am more intimately acquainted than another, it is the subject of pomology. I commenced studying it in my early boyhood, and often when my father and I would differ as to the propriety of some of my juvenile transactions, he would kindly loan me his knife, send me to the orchard with instructions to bring him one of the straightest and toughest limbs I could find, and the lessons which would immediately follow early familiarized me with the apple tree in nearly all its branches.

This much of explanation I thought necessary and proper before reluctantly abandoning familiar subjects to discuss those of which I have less cultivated and experimental knowledge.

Harvest festivals are prehistoric. Heathen mythology is rich with allusions to the festivals of Bacchus and kindred entertainments, and it was doubtless there that Switzerland found her models for those long-continued festivities which are still celebrated in the evergreen glades which nestle at the feet of her Alpine mountains.

The annual fairs held at Nijni Novgorod, where are gathered the traveling merchants from the four corners of the earth, bringing with them their regal fabrics and their costly wares for exchange, barter, and sale; the great world's fairs now so common in Europe, Asia, and America, are all but the outgrowth of the harvest festival of the long ago, when, the season's work being over, the peasantry of the country, comprising shepherds, dairymen, gardeners, mowers, reapers, vinedressers, etc., met to display and enjoy their choicest fruits, the latest products of their dairies, and their richest wines; where fashion and formality were all abjured and joy was unconfined; where old friendships were renewed and new ones formed; where jealousies were buried in mirthful rivalry, and those anniversary days became a jubilee.

Modified by the times, the seasons, and the surroundings, we meet to-night formally to open up our Fair, and then to join you in its revelries. I love to contemplate the scene before me. How beautiful and how pleasant it is to lock the door on business, to bury the hatchet of political strife, to forget our jealousies and our envies, to obliterate city boundaries and county lines, to fling dull care away, and for a few days, at least, to enter into the fraternal enjoyment of this fair land of our heritage—this land of sunshine, flowers, and song!

For the last four weeks I have done little but listen to political harangues in which Demosthenes has vied with Cicero in calumny and vituperation. I have read newspaper biographies of prominent men, some of them our own esteemed, respected, and honored neighbors, and all our fellow-citizens—biographies written by political enemies, until credulity has almost conquered knowledge, and did I now believe in the actual existence of one half of the moral monstrosities which are daily painted with the pen in the editor's sanctum, and by his correspondents, as also by the tongue of the politician while upon the rostrum, I would be inevitably driven to the conclusion that both of the great political parties of this State had each poured a barrel of tartar emetic into hell for the purpose of resurrecting a set of candidates whose record for infamy is peerless.

Mr. President, I conjure you now to issue a peremptory order that the doors of this pavilion be forever closed against politics under whatsoever guise it may appear, and by whatsoever name it may be called. This place is dedicated to fair women and brave men, and to-night we invoke the gods of mirth, of love, of friendship, and of song, to the end that he who goes away with a light, a joyous, and a contented heart, may feel that he has drawn a priceless premium.

I might, with propriety, compliment the management upon the great success which evidences their toil, their labor, and their care, but the work itself is a better compliment than mine.

Commencing with an empty treasury, with the ghost of the old pavilion on the hill stepping between them and each capitalist and public-spirited citizen to whom they made application for financial aid, burdened with the prestige of former failures, with little encouragement and no enthusiasm, a few men, large-hearted and public-spirited, stepped into the breach, and for days and weeks have devoted their time, their energies, their labor, and their money to the accomplishment of this great work. Look at it now, and judge for yourselves; and, having formed some estimate of the magnitude of the undertaking and of its attendant success, inadequate as that estimate necessarily must be, unite with me, my fellow-citizens, in the wish that the good author of happiness may abundantly enrich them in their basket and their store, and may further reward them with that which is more valuable than silver or gold.

On entering the pavilion this evening my attention was arrested by the exhibition of exquisite needlework and embroidery here, and my imagination carried me back nearly six thousand years, according to the chronology of the Bible, to the time when, in a little garden in Asia, then the most populous city of the earth, there might have been seen two individuals, busily engaged in sewing together fig-leaves into garments, and I wondered if it was not true that Eve regarded herself as a first-class dressmaker, and the man thought that he was A-dam good tailor.

Curiosity is an ungovernable jade, and some time when I have leisure, just to please her, I am going to look over the old files of the Hebrew Observer and find out, if I can, if in those days it was customary to advertise ready-made clothing for sale "below cost and no humbug." It seems to me that subterfuge is about old enough to date back to the time when the devil first commenced practicing his deception upon the human family.

Fourteen years ago, when I first came to Los Angeles, I found the demands of the carrying trade of all Southern California supplied by a steamer every fifteen days, and that one half of each cargo was made up of flour, potatoes, onions, turnips, cabbage, and other provender, which it was then thought could not be raised upon our soil. Now, at San Diego, Wilmington, and Santa Barbara, and it may be other ports, whole cargoes of wheat are being shipped direct to Europe, and daily, almost hourly, long trains of cars, loaded with grain and flour and wine and fruit, the produce of our district, taxing to their utmost the iron muscles of one, two, and often three monster locomotives, are to be seen moving eastward across the continent, supplying the great mineral basin which only a few years ago was designated on the maps of the United States as the "great unexplored desert of North America."

Now, if you would see what Southern California soil can do whenever lightly tickled by the plow, look around you! If you would familiarize yourself with some of our resources of wealth and prosperity, look around you! If you would see the skill of the artisan, the handiwork of the maiden, the substantials and delicacies of the matron, and the finished work of the artist, again I say, look around you!

'Tis true, the exhibition is far, very far, from being complete. I look in vain to see here one of those beautiful, tasty, commodious school houses which may be found filled with bright-eyed girls and boys in nearly every voting precinct in our entire district, but still it fills one with pride to know that they are existing realities, though now I see them not. I tell you, that looking on those boys and girls I feel that the legacy of knowledge and intelligence which we shall leave to them will, in their keeping, be multiplied an hundredfold.

But let us go on with the work of filling up our exhibition. Bring here a mine from Calico, almost rich enough in silver to receive the stamp of Government dies and pass as current coin of the realm; load some of those tables with tin from the mountains of ore at Temescal; set up one of the thousand forever-flowing artesian wells for a drinking fountain; cover these walls with panoramic views of leagues on leagues of fields of wheat, and barley, and corn; tabulate your herds of cattle and horses, your droves of hogs and sheep; photograph some of your wineries, in one corner of which this whole pavilion could be placed, and that without seriously inconveniencing the workmen; paint one of your orange groves true to nature, in which the gold and the green forever mingle, and hang that up if space can be found; order chromos showing your countless vineyards covering from one to one thousand acres each; on a map of our district show lines of railroads in every county save one, and let it be known that toward that the iron horse is speeding as fast as men and money can drive him; ornament each nook and corner not already filled with crayon sketches of our mountains and our valleys, and then illuminate the whole by petroleum pumped from the inexhaustible reservoirs of Sespe and San Fernando, and as the stranger stands and looks upon the exhibition I will then say to him, as did the Queen of Sheba to King Solomon: "Behold! the half has not been told!"

The cities of the East now send to us for their early and late fruits, Ireland for her potatoes, England for her beef, France for its wine, and the world for its bread. Our dairies vie with those of Switzerland, our mountains are filled with gold, silver, lead, tin, coal, and marble; our fruits and flowers are perennial, and even the hollow trees in our forests are in active demand as storehouses for our honey. Peace, happiness, prosperity, and plenty are in all our borders. Our poorhouses are empty, and our granaries are full. We literally sit under our own vine and fig tree, and satisfy our appetites with their choicest fruits. The various members of the citrous family have here renounced their allegiance to the torrid zone, and now grow robust and perfect in this, the land of their adoption. The dreaded Winter of the East perishes in crossing the heated plains of Arizona, and Spring never leaves us until it is six months old. The heat of Summer is tempered into luxury by the daily breathings of the sea, and our Summer nights "are not nights, but a sunless yet unclouded day, descending on earth with dews and shadows and refreshing coolness." The lightning, the tornado, and the devastating cyclone burn up, rend in pieces, and destroy in other lands, but here they never come. To us is assigned the delightful pastime of culling the roses along life's pathway, while our less favored brothers pluck the thorns.

To those who have never visited this land of Beulah, my picture may seem visionary and poetic, but it is the vision of reality and the poetry of truth, and, as such, I simply say that "what I have written I have written."

And now, to each and every visitor here to-night, I am commissioned by the managers of this our third annual Fair, to extend to you a hearty welcome. Your land is our land. Our home is your home. Enjoy it with us. At peace with each other, why should we not as brethren dwell together in unity?

I am not, and never have been, a worshiper of crowns or scepters, but here and now I seem to breathe a grateful air of royalty, for, standing in this presence, I see Kern County with her artificial rivers giving life, growth, and maturity to her broad fields of grain; San Luis Obispo with her placid though open roadstead, forged by the hand of nature into the shape of the emblematic "good luck" horseshoe; Santa Barbara with her sanitarium nestling within the shadows of her everlasting hills; Ventura with her flocks and herds owned and tended by honest, enlightened, intelligent yeomen; San Bernardino with her ever-flowing wells, perpetually making green her valleys set as emeralds in the gold and silver of her surrounding mountains; San Diego, sitting by the sea, inviting the commerce of the Orient to the commodious waters of her land-locked harbor, and all as maids of honor, high in rank, are to-night making brilliant this court over which Los Angeles reigns the queen; and judging by the fruits and flowers, the oil and the wine, the beautiful in needlework, painting, and high art on exhibition here, it seems to me that southern California has already made full atonement for the curse of labor, and that henceforward we have only to reap the fruits of an endless harvest and revel in æsthetic luxury.

We live in a country made almost fabulous by its developments and its inventions. During the last one hundred years the leviathan of Holy Writ has shriveled to a pigmy in comparison with the monster steamships which now plow through its native element.

The wild whoop of the Indian has been supplanted by the merry whistle of the locomotive, as with the velocity of the wind it moves the commerce of the world. The daily occurrences of all the civilized nations of the earth, sent through ocean and over mountain on electric wings, crystallized through the medium of type, and press, and steam, are brought at morning and at evening to our doors, and the world's passing history is to-day as familiar to the reader of the village paper as the town gossip of a century ago was to the matrons who then sat and sipped their tea in confidential amity.

In almost every town, scattered and extensive as California towns proverbially are, merchant and customer, physician and patient, attorney and client, neighbors, friends, and lovers, sit within their own respective rooms and talk through telephones with as much distinctness and celerity as if sitting side by side; and even now we have the assurance that in our young city of Los Angeles, before the bells of time ring in the morning of the coming year, we will at night walk her streets made radiant by continuous flames of lightning.

When I remember that it is but a little over a hundred years since old ocean alone sang her lullabies to the uninhabited, sleeping valleys of our southern coast, and only about two decades since the tide of energetic immigration set this way, and when contrasting its present with its almost immediate past, I endeavor to look into the future and by comparison measure its growth, its greatness, and its possibilities for the next hundred years to come, I stand appalled, as one who looks into infinity and seeks to comprehend eternity. Omniscience alone can weigh us as we have been and as we are now, and by proportion estimate our certain future and our possible attainments. But of some things we may with propriety calculate, and among that number is the possibility that before many more years have come and gone the section of country represented here to-night will be erected into an independent sovereignty, and, joining the sisterhood of States, march on to the achievement of the highest destiny of our most favored nation.

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I.				
Best stallion, three years old	J. W. Adams	Downey	Hardwood	$15 00
Best mare, with her horse colt, Common Sense	J. W. Adams	Downey	Cousin Peggy	$10 00
Best mare colt	J. W. Adams	Downey	Minnie Rathburn	$3 00
Best mare	J. W. Adams	Downey	Peggy Ringgold	$5 00
Best stallion	John Gries	San Bernardino	Batchelor	$5 00
CLASS II.				
Best stallion	J. W. Adams	Downey	Hardwood Colt	
Best mare, with two colts, Aunt Betsey and Cousin Peggy	J. W. Adams	Downey	Peggy Ringgold	$20 00
Best mare and colt (not thoroughbred)	John Balston	El Monte	Millie	$10 00
CLASS III.				
Best stallion, six months old	John Ralston	El Monte	Nigger Baby	$5 00
Best stallion, four years old	Geo. Nadeau	Florence	Prince Echo	$12 00
Best stallion, two years old	A. R. Talamantes	Los Angeles	Pavilion	$12 00
Best mare, with colts	D. Burbank	Los Angeles	Kittie	$12 00
Best gelding, three years old	N. A. Covarrubias	Los Angeles	Judge Wallace	$7 00
CLASS IV.				
Best stallion, two years old	D. S. Wardlow	Norwalk	Goodenough	$10 00
Best mare	C. C. Mason	Fulton Wells	Nora	
Best draft stallion (imported from Belgium)	J. D. Patterson	Hueneme	Montebello	$12 00
CLASS V.				
Bay gelding, six years old	W. K. Robinson	Santa Ana	Odd Fellow	$12 00
CLASS VII.				
Best team of ponies	Andrew Covarrubias	Los Angeles	Baby and mate	$15 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS VIII.				
Best saddle horse	J. B. Machado	Los Angeles	Montana	$10 00
CLASS X.				
Best draft suckling colt	J. D. Patterson	Hueneme	Ben Hill	$8 00
Best yearling horse colt	Thos. Canavan	Norwalk	Tommy Richmond	$8 00
Best suckling mare colt	J. A. Kays	Los Angeles	Bertie Richmond	$8 00
SWEEPSTAKES.				
Best stallion, three years old	J. W. Adams	Downey	Hardwood	$20 00
Best mare	J. W. Adams	Downey	Peggy Ringgold	$20 00
Second best stallion, one year old	John Ralston	El Monte	Sandy Bill	$10 00
Second best mare	C. C. Mason	Fulton Wells	Nora	$10 00
CLASS XII.				
Best jack, two years old	J. W. Adams	Downey	Kentucky	$20 00
CLASS I—CATTLE.				
Second best bull, one year old	Wm. Niles	Los Angeles	Duke of Alameda	$4 00
Second best bull, one year old	Wm. Niles	Los Angeles	Sally Duke	$8 00
Best bull, three years old and over	Wm. Niles	Los Angeles	Hero	$6 00
Best bull, one year old	J. F. Sterling	San Bernardino	Oxford Duke	$8 00
Best cow, two years old	J. F. Sterling	San Bernardino	Hildegarde 3d	$10 00
Best cow, one year old	J. F. Sterling	San Bernardino	Hildegarde 4th	$8 00
Best calf under one year	J. F. Sterling	San Bernardino	Hildegarde 6th	$6 00
Second best Jersey bull, two years old	J. F. Sterling	San Bernardino	Rogers	$8 00
Second best Jersey bull, two years old	J. F. Sterling	San Bernardino	Rogers 2d	$5 00
Second best cow	J. F. Sterling	San Bernardino	Rose Howard 4th	$4 00
SWEEPSTAKES.				
Durham bull, second best, one year old and over	Wm. Niles	Los Angeles	Duke of Alameda	$10 00
Second best bull, any age or breed	J. F. Sterling	San Bernardino	Rogers	$10 00
Second best cow, any age or breed	J. F. Sterling	San Bernardino	Hildegarde 3d	$10 00
Best Jersey bull	F. J. Barretto	Downey	Blythe	$20 00
Best bull	F. J. Barretto	Downey	Blythe Idol	$20 00
Best cow, any age or breed	F. J. Barretto	Downey	Lady Ethel	$20 00

CLASS II.				
Best bull	F. J. Barretto	Downey	Blythe	$16 00
Best bull, two years old	F. J. Barretto	Downey	Blythe Idol	$10 00
Best bull, one year old	F. J. Barretto	Downey	Bona Fide	$8 00
Second best	F. J. Barretto	Downey	Sue Morti	$4 00
Best bull calf, one year old	F. J. Barretto	Downey	California Boy	$6 00
Second best	F. J. Barretto	Downey	Tattoo	$3 00
Best cow, three years old	F. J. Barretto	Downey	Lady Ethel	$16 00
Second best	F. J. Barretto	Downey	Beauty of Ipswich	$8 00
Best cow, two years old	F. J. Barretto	Downey	Sun Maid	$10 00
Best cow, one year old	F. J. Barretto	Downey	Victoria	$8 00
CLASS III.				
Best cow, three years old and over	Wm. Niles	Los Angeles	Annie Clifden	$16 00
Best cow, two years old and over	Wm. Niles	Los Angeles	Jeanette	$10 00
Best bull calf	Wm. Niles	Los Angeles	Victor	$6 00
Best herd, thoroughbred, over two years old, one male and four females	F. J. Barretto	Downey	Blythe, Beauty of Ipswich, Lady Ethel, Bonnie Dean, Sun Maid	$20 00
Best herd, thoroughbred, under two years old, one male and four females	F. J. Barretto	Downey	Sue Morti, Victoria, Ida May, Beautiful Blonde, Bonnie Dean	
CLASS I—SHEEP, ETC.				
Best five ewes, two years old	C. Garnier	Los Angeles		$15 00
Best ram, French Merino, and five of his lambs	C. Garnier	Los Angeles		$10 00
GOATS.				
Best Angora goat, and five of his kids	J. C. Pleasants	Santiago	King of Santiago	$10 00
Best goat, and five ewes from two to three years old	J. C. Pleasants	Santiago	Prince of Santiago	$5 00
SWINE.				
Best boar, three years old and over	Wm. Niles	Los Angeles	Prince Consort	$10 00
Best boar, under three years old	Wm. Niles	Los Angeles	Prince Charles	
Best sow, over three years old	Wm. Niles	Los Angeles	Victoria	$10 00
Second best boar, six months and under one year old	Wm. Niles	Los Angeles		$4 00
Best Berkshire boar, one year old	F. J. Barretto	Downey	Queen's Own	$8 00
Best pair pigs, under ten months old	F. J. Barretto	Downey		$10 00
Best sow, six months and under one year old	F. J. Barretto	Downey	Rosa Lee	$8 00
Second best sow, under one year old	F. J. Barretto	Downey	Nancy Lee	$4 00
CLASS II.				
Best boar, six months and under one year old	S. Washburn	Pasadena	Longfellow 1st	$8 00
Best sow, two years old	S. Washburn	Pasadena	Jane	$10 00
Second best sow, over three years old	S. Washburn	Pasadena	Sallie	$5 00

FIRST DEPARTMENT—Continued.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Best pair of pigs, under ten months old	S. Washburn	Pasadena	Longfellow 1st and Sambo	$10 00
SWEEPSTAKES.				
Best boar	F. J. Barretto	Downey	Queen's Own	$10 00
Best sow, of any age or breed	S. Washburn	Pasadena	Jane	$10 00
Best six pigs, of any age or breed	S. Washburn	Pasadena		$10 00
Best family, consisting of one boar, two sows, and six pigs, of any age	S. Washburn	Pasadena		$10 00
POULTRY.				
Best pair Partridge Cochins	William Niles	Los Angeles		$2 50
Best pair White Cochins	William Niles	Los Angeles		$2 50
Best pair Buff Cochins	William Niles	Los Angeles		$2 50
Best pair White Leghorns	William Niles	Los Angeles		$2 50
Best pair Silver Spangled	William Niles	Los Angeles		$2 50
Best pair Bronze turkeys	William Niles	Los Angeles		$2 50
Best pair geese	William Niles	Los Angeles		$2 50
Best pair Aylesbury ducks	William Niles	Los Angeles		$2 50
Best pair Rouen ducks	William Niles	Los Angeles		$2 50
Best pair Pekin ducks	William Niles	Los Angeles		$2 50
Best pair Guinea fowls	William Niles	Los Angeles		$2 50
Best pair peacocks	William Niles	Los Angeles		$3 50
Best four coops Plymouth Rocks, and best four coops Brown Leghorns	C. P. Jillson	Los Angeles		$3 50

SECOND DEPARTMENT.

MACHINERY, ETC.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
P. K. Stockton	St. Helena	Vineyard gang plow, cultivator, and weed cutter	Diploma
A. E. Clement	Los Angeles	Spring tooth harrow	Diploma
M. S. Baker & Co.	Los Angeles	Single riding plow	Diploma
M. S. Baker & Co.	Los Angeles	Granger plow	Diploma
M. S. Baker & Co.	Los Angeles	Iron cultivator	Diploma
L. D. Gavitt	Los Angeles	Cultivator	Diploma
	San Mateo	Hoeing machine	Diploma
L. Bouvier	San Diego	Well pumps	Diploma
W. J. Brown	Los Angeles	Churn	Diploma
M. S. Baker & Co.	Los Angeles	Anvil and drill	Diploma
L. Roeder	Los Angeles	Dog cart	Diploma
W. H. Mintzer	Colton	Locomotive firemen and engineers' shoes	Diploma

THIRD DEPARTMENT.

TEXTILE FABRICS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
H. L. Cozens	Los Angeles	Best fifteen yards woolen carpet	Diploma
B. F. Coulter	Los Angeles	Best display of woolen goods, domestic manufacture	$10 00
C. L. Fisher	Los Angeles	Best display of boots and shoes	Diploma
Mrs. Eva Caldwell	Los Angeles	Best set of pillow and sheet shams	Silver teaspoons
Madame Le Croq	Los Angeles	Best made dress for lady	$5 00
Mrs. A. L. Clayton	Los Angeles	Best leather frame	Napkin ring
Mrs. A. L. Clayton	Los Angeles	Second best cross and wax flowers	Napkin ring
Miss Mabel Bates	Los Angeles	Best embroidered lady's dress	Silver cup
Mrs. C. De Forrest	Los Angeles	Best rug	Hon. mention
Mrs. A. C. Thompson	Duarte	Best embroidery on work	Silver teaspoons
Miss E. R. Croffier	Los Angeles	Best and handsomest toilet set	Diploma
Miss E. R. Croffier	Los Angeles	Best and handsomest toilet for Miss	$2 50
Mrs. M. Wilford	Los Angeles	Best patchwork quilt	Silver cup
Miss Birdie Cannon	Los Angeles	Best tidy	Hon. mention
Mrs. J. E. Canon	Los Angeles		Silver teaspoons
Miss Letitia Bassett	Los Angeles	Best artificial flowers	Napkin ring
Miss Letitia Bassett	Los Angeles	Best embroidery with beads	Napkin ring
Mrs. T. S. Harris	Santa Ana	Best embroid'rd dressing-gown	Silver teaspoons
Miss Josie Morrison	Los Angeles	Best sofa cushion	Silver cup
Miss Josie Morrison	Los Angeles	Best pincushion	Napkin ring
Mrs. C. R. Wilson	Los Angeles	Best ornamental needlework	Napkin ring
Miss Jane Eastman	Los Angeles	Best hair work	Napkin ring
Mrs. M. C. Thomas	Los Angeles	Second best silk quilt	Hon. mention
Mrs. W. J. Brown	Los Angeles	Best afghan	Silver teaspoons
Mrs. Mary C. Daniels	Florence	Second best hearth rugs	Silver teaspoons
Mrs. H. A. Stough	Anaheim	Best worked quilt	Silver cup
Miss G. R. Zagneta	Los Angeles	Best handkerchief box	Hon. mention

Third Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Miss C. R. Sanchez	Los Angeles	Best jesuits work	Napkin ring
Miss J. H. Brooks	Los Angeles	Best wax flowers and cross	Napkin ring
Mrs. J. A. Shephard	Los Angeles	Best hearth rug	Silver teaspoons
Mrs. H. J. Niles	Los Angeles	Best fine lace work	Silver teaspoons
Mrs. H. J. Niles	Los Angeles	Best cone work	Silver cup
Mrs. J. J. Moore	Norwalk	Best embroidered table cover	Silver teaspoons
Mrs. J. J. Moore	Norwalk	Best lambrequins	Sil. spoon-holder
Miss Laura E. Moore	Norwalk	Best display fancy articles	$5 00
Mrs. R. Michaux	Los Angeles	Best display of children's clothing	Silver vase
Mrs. G. A. Price	Los Angeles	Best display of feathers	Spoon-holder
Mrs. C. R. Pierson	Los Angeles	Best Kensington work	Napkin ring
Mrs. F. R. Day	Los Angeles	Best outline embroidery	Silver teaspoons
Mrs. H. E. Stuyvesant	Los Angeles	Best display of ornamental needlework	Napkin ring
Miss H. E. Stuyvesant	Los Angeles	Best hand sewing, four pieces	Silver cup
Miss H. E. Stuyvesant	Los Angeles	Best netting	Napkin ring
Mrs. R. H. Hewitt	Los Angeles	Best silk embroidery	Sil. bouq't holder
Mrs. A. A. Des Autels	Los Angeles	Display of hair work	Diploma
Mrs. C. H. Mathay	Los Angeles	Best wax fruit	Silver teaspoons
Mrs. C. H. Mathay	Los Angeles	Best wax flowers	Napkin ring
Mrs. C. H. Mathay	Los Angeles	Best flowers	Hon. mention
Ladies Aid Society of Episcopal Church	Los Angeles	Best silk quilt	Silver cup
Mrs. E. R. Croffier	Los Angeles	Best pair knit cotton stockings	Napkin ring
Miss Julia Threckeld	Los Angeles	Best water color painting	Nap. ring and $1
Guy A. Rose	San Gabriel	Best oil painting	Dip. and nap. ring
Miss Mary Chase	Los Angeles	Best table scarf	Nap. ring and $1
Miss F. P. Brown	Los Angeles	Best pair knit woolen stockings	Nap. ring and $1
Miss Grace Harrington (aged eleven years)	Los Angeles	Best silk embroidery	Nap. ring and $1
LIBERAL ARTS.			
R. W. Pridham	Los Angeles	Best exhibit of book-binding	Diploma
R. W. Pridham	Los Angeles	Best exhibit of blank-books	Diploma
R. W. Pridham	Los Angeles	Best exhibit of paper boxes	Diploma
The Misses Gamble	Los Angeles	Best exhibit of oil paintings	Diploma
The Misses Gamble	Los Angeles	Best exhibit of fire screens	Diploma
The Misses Gamble	Los Angeles	Best exhibit of bric-a-brac	Diploma
Payne, Stanton & Co.	Los Angeles	Best exhibit of photographs	Diploma
A. B. Hall	Santa Ana	Second best	Hon. mention
Miss E. White	Los Angeles	Best crayon drawings	Napkin ring
W. H. Tallman	Los Angeles	Best crayon portrait	Diploma
I. H. Barren	Los Angeles	Best pen drawings	Diploma
A. B. Hall	Santa Ana	Best photographic views	Hon. mention

FOURTH DEPARTMENT.

MECHANICAL PRODUCTS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
R. W. Pridham	Los Angeles	Exhibit shoe exhibition boxes	Diploma
Truston Clark	Fulton Wells	Best steamboat clock	$2 00
Truston Clark	Fulton Wells	Ornamental fret saw work desk	Diploma
J. H. Baker	Pasadena	Automatic fountain	Diploma
E. F. Ebert	Los Angeles	Best gas oil stove	Diploma
Fuller & Day	Los Angeles	Best woven wire mattresses	Diploma

FOURTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
J. D. Batz	Los Angeles	Best exhibit of carvings	$2 50
S. H. Roberts	Los Angeles	Exhibit automatic sewing mch	Diploma
C. W. Gibson	Los Angeles	Exhibit of bleaching soap	Diploma
C. W. Gibson	Los Angeles	Exhibit of home-made soap	Diploma
Seymour & Johnson	Los Angeles	Exhibit of soap	Diploma
Ellwood Cooper	Santa Barbara	Exhibit of olive oil	Diploma
R. Renshaw	Los Angeles	Exhibit of stained glass	Diploma
John A. Cline	Los Angeles	Exhibit of zoölogical specimens	$5 00
E. M. Hamilton	Los Angeles	Exhibit of asbestine pipe	Diploma
J. R. Mendoza	Los Angeles	Best display of pianos	$10 00
J. R. Mendoza	Los Angeles	Best Spencer piano	Diploma
J. R. Mendoza	Los Angeles	Best Manhattan piano	Diploma
J. R. Mendoza	Los Angeles	Best concert grand piano	Diploma

FIFTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
AGRICULTURAL PRODUCTS.			
J. W. Potts	Los Angeles	Best exhibit of growing cotton	Diploma
Paul Felt	San Gabriel	Best exhibit of beardless barley	Diploma
C. Lewis	El Monte	Best red onions	$1 00
C. Lewis	El Monte	Best white corn	$5 00
C. Lewis	El Monte	Best bale of hops	$2 00
C. Lewis	El Monte	Best Lima beans and carrots	Hon. mention
C. Lewis	El Monte	Best five sacks potatoes (special from Seymour & Johnson)	$5 00
E. M. Hamilton	El Monte	Best watermelons	$1 00
E. M. Hamilton	El Monte	Best muskmelons	$1 00
Snow & Adams	Tustin	Second best white potatoes (not in sufficient quantity to award premium)	
F. W. Twombly	Tustin	Best Lima beans (not in sufficient quantity)	
R. Ranny	Florence	Best Burbank potatoes	$1 00
J. Stanley	Tustin	Best sweet corn (not in sufficient quantity)	
F. A. Coffman	Ranchito	Best and largest yellow corn	$5 00
Ellwood Cooper	Santa Barbara	Best Pennsylvania beans	Diploma
H. Gosper	Santa Ana	Best and only gourd	Hon. mention
Cobler & Haddox	Santa Ana	Best yams	Hon. mention
Cobler & Haddox	Santa Ana	Best yellow onions	$1 00
Cobler & Haddox	Santa Ana	Best Lima beans	$1 00
W. H. Jasper	Santa Ana	Best yellow flint corn	$1 00
Frank Tower	Tustin	Best early corn	$1 00
A. P. Bates	Santa Ana	Second best white corn	Diploma
A. P. Bates	Santa Ana	Second best yellow corn	
W. H. Wakeman	Santa Ana	Best one half bushel potatoes, Brunnell Beauty	$1 00
Milton Thomas	Los Angeles	Best display of fruit trees	Diploma
L. L. Bagnette	Pomona	Display of fruit trees	Hon. mention
Mrs. M. Rosenbaum	Pasadena	Best display of cut flowers	$5 00
DAIRY PRODUCTS, BREAD, ETC.			
Johnson & Lombard	Norwalk	Best display of cheese	$5 00
Thomas Strohm	Los Angeles	Best select cheese	$5 00
Thomas Strohm	Los Angeles	Best cheese and teas display	Diploma
Mrs. F. J. Barretto	Downey	Best ten pounds of butter	$5 00
Ellwood Cooper	Santa Barbara	Display of butter	Hon. mention

Fifth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
L. C. Carey	Los Angeles	Best fifty rolls of butter (special prem. by Seymour & Johnson)	$10 00
Miss Sarah J. Parkhurst	Los Angeles	Best brown bread	Silver cup
Miss Sarah J. Parkhurst	Los Angeles	Best plain cake	Silver cup
Miss Jannette Bassett	Los Angeles	Best domestic corn bread	$2 00
Miss Stella Haines (12 years)	Los Angeles	Second best dom. brown bread	Diploma
Miss Stella Haines	Los Angeles	Best Graham bread	
Miss Stella Haines	Los Angeles	Best domestic wheat bread	$5 00
Miss Stella Haines	Los Angeles	Best light rolls (special by Seymour & Johnson)	$5 00
Miss Sarah J. Parkhurst	Los Angeles	Best pan biscuit from Manhattan Baking Powder	$5 00
Miss Sarah J. Parkhurst	Los Angeles	Best pan biscuit from New England Baking Powder	$5 00
Mrs. John P. Earley	Los Angeles	Best biscuit, San José pat. flour, (spec'l by Seymour & Johns'n)	$5 00
Mrs. W. J. Brown	Los Angeles	Best sponge cake from Manhattan Baking Powder	$5 00
Miss Sarah E. Haines	Los Angeles	Best pan biscuit, Sampson Baking Powder (special by F. C. Howes & Co.)	$25 00
Mrs. R. R. Haines	Los Angeles	Best sponge cake, Sampson Baking Powder (special by F. C. Howes & Co.)	$10 00

SIXTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
FRUITS, ETC.			
W. Ehnendorf	Santa Ana	Display of apples	Special mention
J. W. Potts	Los Angeles	Display of peaches	$5 00
S. W. Prebble	Tustin	Display of apples	Special mention
James Bettner	Riverside	Plate of fourteen peaches (Salway)	Spec. prem. rec
J. Ethridge	Pasadena	Best peaches	$5 00
Snow & Adams	Tustin	Display of apples	Hon. mention
Snow & Adams	Tustin	Best quinces	$2 00
M. Gregory	Pasadena	Display of peaches	Hon. mention
B. F. Ball	Pasadena	Display of apples	Hon. mention
J. W. Wolfskill	Los Angeles	Best display, and greatest number of lemons	$10 00
W. D. Holladay	Santa Ana	Best display of apples	$7 00
W. D. Holladay	Santa Ana	Best six varieties of apples	$5 00
J. N. Baker	Pasadena	Best prunes	$2 00
J. Ethridge	Pasadena	Best display of peaches	$7 00
M. Rosenbaum	Pasadena	Best figs (Elegant)	$2 00
George R. Hinds	Anaheim	Best display of varieties of peaches	$7 00
George R. Hinds	Anaheim	Best display of seedling fruit	$10 00
George R. Hinds	Anaheim	Best six varieties of pears	$5 00
George R. Hinds	Anaheim	Best display and largest variety of fruit by producer	$10 00
Mrs. J. H. Ritchie	Florence	Best raspberry jelly	Silver cup
Mrs. R. R. Haines	Los Angeles	Best apricots, preserved	Napkin ring
Mrs. R. R. Haines	Los Angeles	Best blackberry jelly	Silver cup
Mrs. R. R. Haines	Los Angeles	Best blue plum jelly	Napkin ring
Mrs. R. R. Haines	Los Angeles	Best quince jelly	Napkin ring
Mrs. R. R. Haines	Los Angeles	Best strawberry jam	Napkin ring

SIXTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. R. R. Haines	Los Angeles	Best blackberry jam	Napkin ring
Mrs. R. R. Haines	Los Angeles	Best pickled peaches	Napkin ring
Mrs. R. R. Haines	Los Angeles	Best display of muscat grapes	Diploma
Mrs. R. R. Haines	Los Angeles	Best display of flame tokays	Diploma
Mrs. R. R. Haines	Los Angeles	Best display of jellies, and general display	Diploma
M. Rosenbaum	Pasadena	Preserved guavas	Diploma
L. L. Boquette	Downey	Display of English walnuts	Hon. mention
W. A. Patterson	Westminster	Best dried apricots	Napkin ring
S. H. Carpenter	Pasadena	Display of English walnuts	Hon. mention
M. Rosenbaum	Anaheim	Best dried figs	Napkin ring
George R. Hinds	Anaheim	Best dried peaches	Butter knife
George R. Hinds	Anaheim	Best dried apples	Silver cup
F. A. Coffman	Ranchito	Best English walnuts	$10 00
W. H. Jessup	Hawards	Best Columbia plums, dried	Diploma
W. H. Jessup	Hawards	Best Washington plums, dried	Diploma
W. H. Jessup	Hawards	Best Jefferson plums, dried	Diploma
W. H. Jessup	Hawards	Best cherries, dried	Diploma
W. H. Jessup	Hawards	Best Petty prunes, dried	Diploma
W. H. Jessup	Hawards	Best nectarine plums, dried	Diploma
W. H. Jessup	Hawards	Best golden drop plums, dried	Diploma
Ellwood Cooper	Santa Barbara	Display of almonds	Diploma
Ellwood Cooper	Santa Barbara	Display of apples	Diploma
Ellwood Cooper	Santa Barbara	Display of American chestnuts	Diploma
Hixon, Justi & Co.	San Francisco	Best dried Bartlett pears	
Hixon, Justi & Co.	San Francisco	Best dried Japanese prunes	
Wallace & Co.	Pasadena	Best display of canned fruit	
Wallace & Co.	Pasadena	Best display of peaches in glass	
F. M. Smith	Santa Ana	Display of apples	Hon. mention
A. F. Bates	Santa Ana	Display of apples	Hon. mention
F. A. Felder	Santa Ana	Display of apples	Hon. mention
A. R. McQuilling	Pasadena	Display of fruit	Hon. mention
J. H. Baker	Pasadena		$10 00
J. H. Heydenrich	Pomona	Display of green fruits	Special mention
Burdick	Pomona	Display of fruit	Special mention
Eno	Pomona	Display of lemons, apples, and raisins	Special mention
Howe & Lorney	Pomona	Display of apples and pears	Special mention
R. H. Gilman	Anaheim	Best general display of tropical fruits	$10 00
Peter Jones	S. Bernardino	Display of apples	Hon. mention
	Pomona	Display of apples	Hon. mention
GRAPES, BRANDY, WINE, ETC.			
Geo. R. Hinds	Anaheim	Best display of raisins	Special mention
R. J. Blee	Santa Ana	Best 12 varieties table grapes	$10 00
R. J. Blee	Santa Ana	Best 3 varieties table grapes	$3 00
Silas Ritchie	Tustin	Best dis'y bl'k Morocco grapes	Hon. mention
S. M. Prebble	Tustin	Best white Malaga grapes	Diploma
Sturn & Rose	San Gabriel	Best grape brandy	$5 00
Sturn & Rose	San Gabriel	Best dry wines, four varieties	$20 00
Sturn & Rose	San Gabriel	Best sweet wines	$15 00
M. Rosenbaum	Pasadena	Best blackberry cordial	$5 00
Wilmerding & Co.	San Francisco	Display of Peruvian bitters	Diploma
HONEY—SPECIAL PREMIUMS.			
W. W. Bliss	Duarte	Comb foundation and foundation mill	Diploma
W. W. Bliss	Duarte	Italian bees	$5 00
W. W. Bliss	Duarte	Fruit preserved with honey	Silver cup
W. W. Bliss	Duarte	Beekeepers' implements	Diploma
W. W. Bliss	Duarte	Honey vinegar	$1 00
W. W. Bliss	Duarte	Best Italian queen	$5 00
Miss Ella R. Ballou	San Mateo	Best ten pounds beeswax	One year's sub'n to Apiaculturist
J. C. Pleasants	S'nt'go Cañon, Carbondale	Botanic display, honey plants, by Hatch & Barclay, S. Fr'sco	$10 00

SIXTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
J. C. Pleasants	S.C. Carb'dale	Best comb honey	$5 00
Mrs. J. C. Pleasants	S.C. Carb'dale	Best extracted honey, by Burch & Boal, Los Angeles	$5 00
J. C. Pleasants	S.C. Carb'dale	Best display of honey, sweepstakes, by Hatch & Barclay	$5 00
N. Levering	Los Angeles	Best colonies of bees	Silver cup
Mrs. H. M. Dunsmoor	Sepulveda	Best honey in comb, by Hatch & Barclay	$5 00
N. Levering	Los Angeles	Best pair of gloves	$1 50
Mrs. J. H. Ritchie	Los Angeles	Best honey preserved fruits, by Merrill & Babcock	Parlor stove

MISCELLANEOUS DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
E. M. Hamilton	Los Angeles	Best system of sub-irrigation	Diploma
L. G. Oliver	S. Barbara	Best sugar cured hams	$5 00
L. G. Oliver	S. Barbara	Best bacon	$5 00
O. P. Sutton	Los Angeles	Collection of coins	Hon. mention
L. Fleischman	Los Angeles	Collection of tarantulas and curios	$1 00
Preuss & Pironi	Los Angeles	Display of fancy articles	Hon. mention
Lewis Martin	Los Angeles	Display of picture scrap book	Diploma
Thomas Strohm	Los Angeles	Display of fine teas	Diploma
Tho. Coulter	Los Angeles	Collection of eggs	Hon. mention
E. Leiss	Los Angeles	Display of confectionery	Diploma
W. W. & S. A. Widney	Los Angeles	Display of fancy articles, California manufacture	Hon. mention
J. A. Valder	Los Angeles	Elegant display of pictures and frames	Diploma
John B. Niles	Los Angeles	Zimmerman's fruit drier	Diploma
E. W. Pratt & Co.	Los Angeles	Display of coffees and spices	Dip. and H. men
G. T. Hanley & Co.	Los Angeles	Display of coffees and spices	Dip. and H. men
G. T. Hanley & Co.	Los Angeles	Display of flavoring extracts	Diploma

BABY SHOW.

LESS THAN TWO YEARS OLD.

Name.	P. O. Address.	Award.
Bertie Lewis	Downey	First, baby buggy
Charlie Mahen	Los Angeles	Second, blanket
Walter Whipple	Los Angeles	Third, silver cup
Charlie Daniels	Florence	Fourth, silver cup
Frankie Umsted	Los Angeles	Fifth, slippers
Alice Armstron, 18 months, 29 pounds	Los Angeles	
Frederick James English, John Thomas English, } Twins	Anaheim	By friends, $40

SPEED PROGRAMME.

TUESDAY, OCTOBER 17TH, 1882.

RACE NO. 1—TROTTING.

All trotting races are the best three in five, unless otherwise specified, three to enter and two to start. Entrance fee, ten per cent on purse, to accompany nomination. Purses divided at the rate of sixty per cent to first horse, thirty per cent to second, and ten per cent to third. National Association Rules to govern trotting; but the Board reserves the right to trot heats of any two classes alternately, if necessary to finish any day's racing, or to trot a special race between heats.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Hattie Johnson, b. m., by Echo; dam, unknown; full sister to Gibraltar	L. H. Titus	San Gabriel
Hunter, br. g., by Fox Hunter; dam, unknown; Fox Hunter, by dam unknown	L. J. Felton	Santa Ana
Lady Washington, b. m., by Whipple; dam, Kittie Clyde	E. L. Maybury	San Gabriel
Don Carlos, s. g., by Del Sur; dam, The Moor	L. J. Rose	San Gabriel

Position at Starting.		*Position at Close.*	
1.	Lady Washington	Lady Washington	1
2.	Hunter	Don Carlos	2
3.	Hattie Johnson	Hunter	3
4.	Don Carlos	Hattie Johnson	4

Time—2:36¼; 2:39; 2:37½.

RACE NO. 2—TROTTING.

Race not filled.

RACE NO. 3—TROTTING.

All running purses to be divided, two thirds to the first horse, and one third to the second horse; four to enter and two to start, except Race No. 11, three to enter and two to start.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Augusta E., br. f., by Monday; dam, Norfolk. (Withdrawn)	B. P. Hill	San Diego
Ela, s. f., by Rutherford; dam, Nina R., by Woodburn, by Lexington	H. M. Johnson	Los Angeles
Ballona, br. m., by Norfolk; dam, unknown	Andreas Machado	Los Angeles
Aunt Betsey, b. f., by Hardwood; dam, Peggy Ringgold	J. W. Adams	Los Angeles
Dotty Dimple, b. f., by Ben. Wade; dam, unknown		

Position at Starting.		*Position at Close.*	
1.	Aunt Betsey	Aunt Betsey	1
2.	Dotty Dimple	Dotty Dimple	2
3.	Ballona	Ballona	3

Time—0:48¾.

WEDNESDAY, OCTOBER 18TH, 1882.

Race No. 4.

Free for all.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Bullet, b. g., by Echo; dam, unknown	L. H. Titus	San Gabriel
Prentice Boy, br. g., by The Moor; dam, unknown	John Reynolds	Los Angeles
Charlie D., buckskin g.; pedigree unknown	N. A. Covarrubias	Los Angeles

Position at Starting.	Position at Close.	
1. Charlie D.	Charlie D.	1
2. Bullet	Bullet	2
3. Prentice Boy	Prentice Boy	3

Time—2:33; 2:36; 2:39; 2:38; 2:35.

Race No. 5—Trotting.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Ela, s. f., by Rutherford; dam, Nina R., by Woodburn, by Lexington	H. M. Johnson	Los Angeles
Mollie Adams, b. m., by Ben. Wade, by Woodburn; dam, unknown	T. H. Pellet	Ranchito, L.A.Co.
Otto K., b. g., sired by Nirdal; dam, Belmont mare	N. A. Covarrubias	Los Angeles
Fox, s. g.	F. Sepulveda	Los Angeles
Minnie, g. m., and Pele; pedigree unknown	M. A. Forster	S. J. Capistrano
Belle G., b. f., by Ben Wade; dam, Shoo Fly	Hill & Gries	Ventura

Position at Starting.	Position at Close.	
1. Minnie	Otto K.	1
2. Fox	Fox	2
3. Otto K.	Belle G.	3
4. Belle G.	Minnie	4

Time—0:50; 0:50½.

Race No. 6—Running.

Free for all.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Joe Dion, b. br. g.	E. S. Paddock	San Francisco
Klipspringer, b. s.	Francisco Estudillo	Los Angeles
Mestiza, b. m.	Cyrus Lyon	Los Angeles
Pele, b. m.; unknown	M. F. Forster	S. J. Capistrano
Wild Idler, b. s.	Hill & Gries	Ventura

Walk-over for Wild Idler.

THURSDAY, OCTOBER 19TH, 1882.

RACE NO. 7—TROTTING.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Kate Bender, bl. m., by Chief; dam, unknown	William Smith	Savannah
Tempest, b. f., by Sultan; dam, Belle Mason	F. M. Slaughter	Chino
Center, g. g., by Sultan; dam, Belleview Maid	L. J. Rose	San Gabriel

Time—2:59.

EXTRA RACE—TROTTING.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Debonair, blk. f.	L. J. Rose	San Gabriel
Mary Jane	E. L. Maybury	San Gabriel
Draper, g. g.	J. Cowper	San Gabriel
Echo Colt—(Withdrawn)	Ed. Dupuy	San Gabriel

Time—Mary Jane—2:49; 2:47; 2:45.

FRIDAY, OCTOBER 20TH, 1882.

RACE NO. 8—TROTTING.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Hattie Johnson, b. m., by Echo; dam, unknown	L. H. Titus	San Gabriel
Hunter, b. g., by Fox Hunter; dam, unknown	L. J. Felton	Santa Ana
Lady Washington, b. m., by Whipple; dam, Kitty Clyde	E. L. Maybury	San Gabriel
Don Carlos, s. g., by Del Sur; dam, The Moor	L. J. Rose	San Gabriel

Time—Lady Washington, 2:44½; 2:40; 2:36½.

RACE NO. 9—TROTTING.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Augusta E., br. f.; (withdrawn)	B. P. Hill	San Diego
Ela, s. f., by Rutherford; dam, Nina R.	H. M. Johnson	Los Angeles
Ballena, br. m.; (withdrawn)	Andreas Machado	Los Angeles
Aunt Betsey, b. f., by Hardwood; dam, Peggy Ringgold	J. W. Adams	Los Angeles
Dotty Dimple, blk. f.	Hill & Gries	S. Buenaventura

Position at Close of Race.

Aunt Betsey	1
Dotty Dimple	2
Ela	3

Time—1:16½.

SATURDAY, OCTOBER 21st, 1882.

Race No. 10—Trotting.

Free for all.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Belle Echo, b. m.	L. H. Titus	San Gabriel
Charlie D., buckskin	N. A. Covarrubias	Los Angeles
Del Sur, b. s.	L. J. Rose	San Gabriel

Position at Starting.	*Position at Close.*	
1. Del Sur	Del Sur	1
2. Belle Echo	Belle Echo	2
3. Charlie D.	Charlie D.	3

Time—2:30; 2:28; 2:30; 2:29; 2:29.

Race No. 11—Running.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mollie Adams, b. m., by Ben Wade; dam, unknown	T. A. Pellet	Ranchito
Otto K., b. g., dam, Belmont mare; sired by Nirdal	N. A. Covarrubias	Los Angeles
Minuie; pedigree unknown	M. A. Forster	San Juan
Belle G., b. f., by Ben Wade; dam, Shoo Fly	Hill & Gries	S. Buenaventura

Time—Otto K., 1:18½.

Race No. 12—Running.

Free for all.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Joe Dion, b. br. g.; (withdrawn)	E. S. Paddock	San Francisco
Klipspringer, br. s., by Wild Idler; dam, Pele	Francisco Estudillo	Los Angeles
Mestiza, b. m., by Ben Wade; dam, Lexington mare	Cyrus Lyon	Los Angeles
Wild Idler, b. s.	Hill & Gries	S. Buenaventura

Time—Wild Idler, 4:19.

TRANSACTIONS

OF THE

SEVENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of Monterey, San Luis Obispo, Santa Cruz, and San Benito.

OFFICERS OF THE ASSOCIATION

J. D. CARR	President
S. J. WESTLAKE	Secretary
WM. VANDERHURST	Treasurer

DIRECTORS.

EUGENE SHERWOOD	Salinas City
J. R. HEBBRON	Salinas City
DR. THOS. FLINT	San Juan
S. M. WARDEN	San Luis Obispo
P. F. DEAN	Watsonville
H. S. BALL	Salinas City
W. V. McGARVEY	Salinas City
J. D. CARR	Salinas City

REPORT.

SALINAS CITY, November 28, 1882.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Seventh District Agricultural Association submit this their report of the transactions of said Association for the year ending this date.

S. J. WESTLAKE, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Single admission tickets	$ 624 75	
Season tickets	87 00	
Annual membership	340 00	
Hack badges	33 00	
Privileges	609 95	
Subscriptions	260 50	
Entrance money	532 50	
State warrant (less discount)	1,172 00	
		$3,659 70

Expenditures.

Material	$ 539 28	
Labor	681 58	
National Trotting Association	57 25	
Premiums and purses	2,161 00	
Music (band)	150 00	
Salinas City Bank (balance due)	7 13	
Cash on hand	63 46	
		$3,659 70

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—ROADSTERS.				
Stallion or gelding, four years old and over	J. D. Carr	Salinas City	Carr's Mambrino	$10 00
Stallion or gelding, four years old and over	P. E. G. Arzeo	San Juan	Splann	
Mare, four years old and over	P. E. G. Arzeo	San Juan	Ella T.	$10 00
Mare, four years old and over	P. E. G. Arzeo	San Juan	Lallah Rookh	
Mare, three years old	J. D. Carr	Salinas City	Sweetness	$5 00
HORSES FOR ALL PURPOSES.				
Stallion, four years old and over	M. Walters	Monterey	Luconia	
Stallion, four years old and over	J. D. Carr	Salinas City	General Lee	
Stallion, four years old and over	Jas. Delany	Salinas City	Tom Vernon	
Stallion, four years old and over	Jas. Luce	Salinas City	Alisal Chief	
Stallion, four years old and over	R. Corey	Salinas City	Vermont, Jr.	$20 00
Stallion, four years old and over	P. Chrisman	Gonzales	Patchen George	
Stallion, three years old	John Brown	Arroyo Seco	Commodore	
Stallion, three years old	J. R. Hebbron	Salinas City	St. George	$15 00
Stallion, three years old	R. Corey	Salinas City	Billy	
Stallion, two years old	H. Corey	Salinas City	Clarence King	$10 00
Stallion, two years old	P. E. G. Arzeo	San Juan	Billy Donathan	
Stallion, one year old	J. D. Carr	Salinas City	Busted	$7 50
Stallion, one year old	C. Luce	Salinas City	Star of the West	
Suckling colt	J. D. Carr	Salinas City		
Suckling colt	Jno. Sexton	Salinas City		
Suckling colt	J. B. Iverson	Salinas City		$5 00
Suckling colt	H. Corey	Salinas City		
Suckling colt	C. W. Cox	Watsonville		
Mare, three years old and over	Geo. McIntyre	Salinas City	Nell	
Mare, three years old and over	J. B. Iverson	Salinas City	Lizzie	$7 50
Mare, three years old and over	J. D. Carr	Salinas City	Clara	$15 00

Mare, two years old	J. D. Carr	Salinas City	Mamie	$7 50
Mare, one year old	John Sexton	Salinas City	Belle	$5 00
Gelding, three years old and over	J. D. Carr	Salinas City	Trouble	
Gelding, three years old and over	J. D. Carr	Salinas City	General Jackson	$15 00
Gelding, three years old and over	D. W. Evans	Watsonville	Pajaro Chief	
Mare, four years old and over, with colt	J. D. Carr	Salinas City	Lady Morrill and colt	
Mare, four years old and over, with colt	J. D. Carr	Salinas City	Lady Gray Eagle and colt	
Mare, four years old and over, with colt	John Sexton	Salinas City	Lucy and colt	
Mare, four years old and over, with colt	Robert Garcide	Salinas City	Mollie and colt	
Mare, four years old and over, with colt	H. Corey	Salinas City	Belle and colt	
Mare, four years old and over, with colt	John Brown	Arroyo Seco	Jennie and colt	$10 00
DRAFT HORSES.				
Stallion, three years old and over	P. Conroy	Gonzales	Frank, the Plowboy	
Stallion, three years old and over	Wm. Robson	Salinas City	Prince Charley	$15 00
Stallion, three years old and over	D. Hargins	Chualar	Prince	
Stallion, two years old	L. B. Wilmuth	Salinas City	Pride	$10 00
Mare, three years old and over	H. Corey	Salinas City	Rosa	$10 00
Suckling colt	John Brown	Arroyo Seco	Favorite	$5 00
Suckling colt	John Sexton	Salinas City	Billy	
Suckling colt	Robert Garcide	Salinas City	Frank	
Suckling colt	Robert Garcide	Salinas City	John	
CARRIAGE HORSES.				
Span of carriage horses	J. D. Carr	Salinas City	Mack and Joe	$10 00
Span of carriage horses	J. B. Iverson	Salinas City	Copper Boy and Frank	
Span of buggy horses	J. D. Carr	Salinas City	Jackson and Lee	$7 50
Span of buggy horses	Wm. Gift	Hollister	Fly and Sirp	
Span of buggy horses	T. F. Fall	Chualar	Jesse and Dick	
Span of buggy horses	J. G. Sanchez	San Juan	Kate and Nellie	
Single buggy horse	J. D. Carr	Salinas City	Jerry	
Single buggy horse	P. Kilburn	Salinas City	Sarpedon	$5 00
SWEEPSTAKES.				
Stallion, with four or more of his colts	M. Walters	Monterey	Lecconia and four colts	$20 00
Stallion, with four or more of his colts	J. D. Carr	Salinas City	Carr's Membrino and four colts	
Stallion, with four or more of his colts	Charles Luce	Salinas City	Alisal Chief and four colts	
Mare, with four or more colts	J. D. Carr	Salinas City	Lady Morrill and five colts	$20 00
Stallion, of any breed or age	J. D. Carr	Salinas City	Carr's Membrino	
Stallion, of any breed or age	J. D. Carr	Salinas City	General Lee	
Stallion, of any breed or age	H. Corey	Salinas City	Clarence King	
Stallion, of any breed or age	P. Conroy	Salinas City	Frank, the Plowboy	
Stallion, of any breed or age	D. Hargiar	Chualar	Prince	

First Department—Continued.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Stallion, of any breed or age	R. Corey	Salinas City	Vermont, Jr.	$10 00
Stallion, of any breed or age	R. Corey	Salinas City	Billy	
Stallion, of any breed or age	P. E. G. Arzeo	Salinas City	Billy Donathan	
Stallion, of any breed or age	J. R. Hebbron	Salinas City	St. George	$15 00
Mare, of any breed or age	J. D. Carr	Salinas City	Sweetness	
Mare, of any breed or age	J. D. Carr	Salinas City	Clara	$10 00
Mare, of any breed or age	H. Corey	Salinas City	Belle	
Mare, of any breed or age	J. L. Kester	San Luis Obispo	San Luis Maid	$15 00
Gelding, of any breed or age	J. D. Carr	Salinas City	Trouble	
Gelding, of any breed or age	P. Kilburn	Salinas City	Sarpedon	
Gelding, of any breed or age	J. D. Carr	Salinas City	General Jackson	
Gelding, of any breed or age	D. W. Evans	Watsonville	Pajaro Chief	$10 00
Colt, of any breed or age	Robert Garcide	Salinas City	Frank	
Colt, of any breed or age	J. B. Iverson	Salinas City	Star	$5 00
Colt, of any breed or age	C. Luce	Salinas City	Star of the West	
CLASS II—GRADED CATTLE.				
Grade bull	B. Hitchcock	Salinas City	Jack	$10 00
Grade bull	Phil. Collins	Gonzales	George Graves	
Cow, three years old and over	Phil. Collins	Gonzales	Lady Escolle	$10 00
Cow, three years old and over	Geo. McIntyre	Salinas City	Pet	
Cow, three years old and over	Geo. McIntyre	Salinas City	Rose	
Cow, three years old and over	James Delany	Salinas City	Belle	
Grade bull calf	Geo. Pomeroy	Salinas City	Captain Jack	$5 00
SHEEP—MERINOS.				
Ram	J. D. Carr	Salinas City	Monarch	$15 00
Ram	J. D. Carr	Salinas City	Jim	
Ram	J. D. Carr	Salinas City	Chief	
Ewe	J. D. Carr	Salinas City	Beauty	$10 00
Ewe	J. D. Carr	Salinas City	Daisy	
Three ram lambs	J. D. Carr	Salinas City		$5 00
Pen of not less than five ewe lambs	J. D. Carr	Salinas City		$10 00
Family, one ram, two ewes and lambs	J. D. Carr	Salinas City		$10 00
SOUTHDOWNS.				
Ram	J. D. Carr	Salinas City	Joe	$5 00
Ewe	J. D. Carr	Salinas City	Queen	$5 00

Three ram lambs	J. D. Carr	Salinas City		$5 00
Pen of five ewe lambs	J. D. Carr	Salinas City		$5 00
SWEEPSTAKES.				
Ram for all purposes	J. D. Carr	Salinas City	Monarch	$10 00
Ewe for all purposes	J. D. Carr	Salinas City	Daisy	$10 00
SWINE.				
Boar of any breed	W. M. R. Parker	Salinas City	Jack	$10 00
Boar of any breed	J. R. Hebbron	Salinas City	Black Sam	
Sow of any breed	W. M. R. Parker	Salinas City	Sally	$5 00
Pair of pigs, under six months	W. M. R. Parker	Salinas City		$5 00
POULTRY.				
Pair Black Spanish chickens	H. C. Tuttle	Salinas City		$2 00
Pair Light Brahma chickens	C. P. Nance	Salinas City		$2 00
Pair Pekin ducks	H. C. Tuttle	Salinas City		$2 00
Pair White Leghorn chickens	George Pomeroy	Salinas City		$2 00
Pair Houdan chickens	H. C. Tuttle	Salinas City		$2 00
Pair Brown Leghorn chickens	George Pomeroy	Salinas City		
Pair Brown Leghorn chickens	H. C. Tuttle	Salinas City		$3 00
Pair Toulouse geese	H. C. Tuttle	Salinas City		$2 00
Pair Plymouth Rock chickens	H. C. Tuttle	Salinas City		$2 00

SECOND DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS III—FIRST DIVISION.			
Durgan & White	Salinas City	Centennial windmill	$5 00
Judson Manufacturing Co.	Oakland	Victor mower	$5 00
Vanderhurst, Sanborn & Co.	Salinas City	Gale's chilled plow, walking	
Vanderhurst, Sanborn & Co.	Salinas City	Hill's chilled plow, walking	
Vanderhurst, Sanborn & Co.	Salinas City	John Dacoe's plow, walking	$10 00
Vanderhurst, Sanborn & Co.	Salinas City	One gang plow	$10 00
Vanderhurst, Sanborn & Co.	Salinas City	Calhoun grain sower	$2 50
Vanderhurst, Sanborn & Co.	Salinas City	One hay rake	$5 00
SECOND DIVISION.			
Iverson Bros.	Salinas City	One family carriage	$7 50
E. Maguire	Salinas City	One open buggy	$5 00
E. Bowman	Santa Cruz	One open buggy	
Vanderhurst, Sanborn & Co.	Salinas City	One lot brass work	$2 50
P. Eitzert	Salinas City	One lot brass work	
Vanderhurst, Sanborn & Co.	Salinas City	One lot wire work	$2 50
P. Eitzert	Salinas City	One lot plumber's goods	$5 00
THIRD DIVISION.			
M. Hughes	Salinas City	Lot harness and saddlery work	$7 50
M. Hughes	Salinas City	One team harness, district make	$5 00
M. Hughes	Salinas City	One team harness, Cal. make	$5 00
M. Hughes	Salinas City	One single buggy harness	$5 00
M. Hughes	Salinas City	One double buggy harness	$5 00
M. Hughes	Salinas City	One lady's saddle	$3 00
M. Hughes	Salinas City	One gent's saddle	$3 00
P. Eitzert	Salinas City	One exhibit tinware	$10 00
P. Eitzert	Salinas City	One lot stoves	$5 00
Vanderhurst, Sanborn & Co.	Salinas City	One lot stoves	$10 00
P. Eitzert	Salinas City	One lot copper	$2 50
Domestic Manufactures.			
Vanderhurst, Sanborn & Co.	Salinas City	One lot woolen goods and carpets	$7 50
C. W. Cox	Watsonville	Lot home-made woolen socks	$3 00
C. W. Cox	Watsonville	One lot home-made woolen stockings	
Mrs. S. M. Shearer	Salinas City	Two pairs woolen stockings	
Vanderhurst, Sanborn & Co.	Salinas City	Set parlor furniture	$5 00
Vanderhurst, Sanborn & Co.	Salinas City	Set chamber furniture	$5 00
Vanderhurst, Sanborn & Co.	Salinas City	Exhibit spring mattress	$3 00
Vanderhurst, Sanborn & Co.	Salinas City	Exhibit upholstery	$5 00
Vanderhurst, Sanborn & Co.	Salinas City	One spring bed	
Farm Products.			
S. O. Pugh	Gonzales	One sack wheat	$3 00
W. T. Gilkey	Watsonville	One sack wheat	$3 00
W. T. Gilkey	Watsonville	One sack barley	$3 00
W. T. Gilkey	Watsonville	One sack oats	$3 00
S. O. Pugh	Gonzales	One sack oats	$3 00
W. T. Gilkey	Watsonville	One sack buckwheat	$3 00
W. T. Gilkey	Watsonville	One sack rye	$3 00
W. T. Gilkey	Watsonville	One sack corn	$3 00
W. T. Gilkey	Watsonville	One sack flaxseed	$3 00
W. T. Gilkey	Watsonville	Collection of native grains	$3 00
W. T. Gilkey	Watsonville	Lot California peppermint	$2 50
J. R. Gilkey	Watsonville	Five pounds honey, in comb	$2 50
J. R. Gilkey	Watsonville	Five pounds strained honey	$2 50
Garden Products.			
H. Corey	Salinas City	Two sacks potatoes	$5 00
W. T. Gilkey	Watsonville	One sack dried beans	$2 00
W. T. Gilkey	Watsonville	One lot melons	$1 00
W. T. Gilkey	Watsonville	One lot squashes	$1 00
W. T. Gilkey	Watsonville	One lot cucumbers	$1 00
J. R. Gilkey	Watsonville	One lot cucumbers	$1 00
W. T. Gilkey	Watsonville	One lot tomatoes	$1 00

SECOND DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
FOURTH DIVISION.			
W. H. Taft	Salinas City	Five varieties apples	
W. T. Gilkey	Watsonville	Twenty-three varieties apples	$10 00
W. T. Gilkey	Watsonville	Display fruit of all descriptions	$10 00
W. T. Gilkey	Watsonville	Twelve varieties apples	$6 50
W. T. Gilkey	Watsonville	Single variety apples	$3 50
J. R. Gilkey	Watsonville	Single variety apples	
S. O. Pugh	Gonzales	Single variety apples	
W. T. Gilkey	Watsonville	Collection pears	$6 50
W. T. Gilkey	Watsonville	Twelve varieties pears	$6 50
W. T. Gilkey	Watsonville	Single variety pears	$4 00
W. T. Gilkey	Watsonville	Collection peaches	$4 00
W. T. Gilkey	Watsonville	Collection plums	
J. R. Gilkey	Watsonville	Collection plums	$3 50
W. T. Gilkey	Watsonville	Collection grapes	$4 00
S. O. Pugh	Gonzales	Collection grapes	$4 00
W. T. Gilkey	Watsonville	Collection nuts	
C. P. Nance	Salinas City	Collection nuts	$5 00
W. T. Gilkey	Watsonville	Collection oranges and lemons	$9 00
Domestic Canned Fruit.			
Mrs. W. T. Gilkey	Watsonville	Twenty-two varieties canned fruit	$3 00
C. W. Cox	Watsonville	Fourteen varieties canned fruit	$5 00
W. T. Gilkey	Watsonville	Seven varieties jelly	$2 50
Fruit in Glass.			
Mrs. W. T. Gilkey	Watsonville	Five varieties	$5 00
C. W. Cox	Watsonville	Five varieties	$3 00
Mrs. J. R. Gilkey	Watsonville	One lot pickles	$2 00
C. W. Cox	Watsonville	One lot pickles	$1 50
C. W. Cox	Watsonville	One lot sweet pickles	$2 00
J. R. Gilkey	Watsonville	One lot dried fruit	$5 00
C. W. Cox	Watsonville	One lot dried fruit	
W. T. Gilkey	Watsonville	One lot dried fruit	
Miscellaneous.			
C. W. Cox	Watsonville	One lot sweet white wine	$2 00
C. W. Cox	Watsonville	One lot sweet red wine	$2 00
C. W. Cox	Watsonville	One lot blackberry wine	$2 00
J. R. Hebbron	Salinas City	Five cheeses	$5 00
H. Corey	Salinas City	One lot butter	$5 00
Mrs. G. Downie	Salinas City	One lot home-made bread	$2 50
Miss Ida Gilkey	Watsonville	One lot home-made bread	$2 00
Miss Mollie Williams	Salinas City	One lot home-made bread	$3 00
Miss Florence Hebbron	Salinas City	One lot home-made bread	$5 00
Mrs. M. E. Hessel	Salinas City	Lot millinery goods and wares	$7 50
Mrs. M. E. Hessel	Salinas City	One exhibit dressmaking	$5 00
Mrs. S. M. Shearer	Salinas City	One exhibit silk embroidery	$1 00
Mrs. A. W. Poole	Salinas City	One exhibit silk embroidery	
Mrs. R. L. Porter	Salinas City	One exhibit silk embroidery	
Mrs. A. W. Poole	Salinas City	One exhibit silk embroidery	$2 00
Mrs. L. Soto	Salinas City	One exhibit silk embroidery	
Mrs. U. Hartnell	Salinas City	One exhibit cambric embroidery	$1 50
Mrs. G. Downie	Salinas City	One exhibit cambric embroidery	$1 00
Mrs. G. Downie	Salinas City	One netted woolen shawl	$1 50
Mrs. G. Downie	Salinas City	One pair netted pillow shams	
Mrs. G. Downie	Salinas City	One pr netted window curtains	
Mrs. G. Palmtag	Salinas City	One netted woolen shawl	$1 00
Mrs. H. V. Morehouse	Salinas City	Two netted collars	$1 00
Mrs. H. V. Morehouse	Salinas City	Pair netted pillow shams	
Mrs. Linda Soto	Salinas City	Two pieces netting	$1 50
Mrs. S. M. Shearer	Salinas City	One crochet tidy	$1 50
Mrs. S. M. Shearer	Salinas City	One crochet tidy	
Miss D. Soto	Santa Rita	One crochet tidy	$2 50
Miss D. Soto	Santa Rita	Two pieces canvas work	$2 50
Mrs. R. L. Porter	Salinas City	Canvas tidy	$1 50

SECOND DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Miss Mattie Williams	Salinas City	Canvas tidy	
Mrs. G. Palmtag	Salinas City	Cotton tidy	
Mrs. R. L. Porter	Salinas City	Cotton tidy	$1 50
Mrs. H. V. Morehouse	Salinas City	Cotton tidy	$1 00
Mrs. M. E. Hessel	Salinas City	One sofa cushion	$1 50
Mrs. G. Downie	Salinas City	One sofa cushion	
Mrs. Linda Soto	Salinas City	One sofa cushion	$2 00
Miss D. Soto	Salinas City	Cardboard box	$1 50
Mrs. Linda Soto	Salinas City	Cardboard box	$1 00
Mrs. A. W. Poole	Salinas City	One chenille handkerchief box	$1 50
Miss J. Buenaventura	Salinas City	One chenille picture frame	$1 00
Mrs. W. T. Gilkey	Watsonville	One piece moss work	$1 50
Mrs. W. H. Webb	Salinas City	One piece moss work	$2 00
Mrs. S. M. Shearer	Salinas City	One piece worsted work	$2 00
Mrs. G. Downie	Salinas City	One piece worsted work	$1 00
Mrs. G. Downie	Salinas City	One piece worsted work	
Mrs. J. K. Alexander	Salinas City	One piece worsted work	
Mrs. G. B. Smith	Salinas City	One piece worsted work	$1 50
Mrs. W. T. Gilkey	Watsonville	One piece hair work	
Mrs. M. E. Hessel	Salinas City	One piece hair work	$2 00
Mrs. M. Hunter	Salinas City	One piece hair work	$2 00
Mrs. J. B. Smith	Salinas City	One undersleeve, embroidered	$1 50
Mrs. S. M. Shearer	Salinas City	One handkerchief, embroid'd	$1 50
Mrs. W. P. Nicholls	Salinas City	One handkerchief, embroid'd	
Mrs. G. Downie	Salinas City	One handkerchief, embroid'd	
Mrs. S. M. Shearer	Salinas City	One knit shawl	$2 00
Mrs. S. M. Shearer	Salinas City	One piece worsted crochet work	$1 00
Mrs. R. L. Porter	Salinas City	One piece worsted crochet work	$2 50
Mrs. S. M. Shearer	Salinas City	One piece worsted crochet work	
Mrs. R. L. Porter	Salinas City	One knit rug	$2 50
Mrs. W. P. Nicholls	Salinas City	One knit quilt	$2 50
Mrs. W. P. Nicholls	Salinas City	One knit cradle quilt	
Mrs. J. B. Smith	Salinas City	Two woolen patchwork quilts	
Mrs. L. H. Garrigus	Salinas City	One woolen patchwork quilt	
Mrs. Sarah Keith	Salinas City	Two woolen patchwork quilts	$2 00
Miss Ida Gilkey	Watsonville	One cotton patchwork quilt	$2 00
Mrs. S. M. Shearer	Salinas City	One cotton patchwork quilt	
Mrs. S. F. Geil	Salinas City	One lot needlework	$2 00
Mrs. W. P. Nicholls	Salinas City	One lot needlework	$2 00
Miss D. Soto	Santa Rita	One embroidered table scarf	$2 00
Mrs. W. P. Nicholls	Salinas City	Two embroidered mats	$1 00
J. Donner	Salinas City	Sewing machine for all purp'ses	$2 50
J. Donner	Salinas City	Sewing machine for fancy work	$2 50
J. Donner	Salinas City	Exh. of sewing machine work	$2 50
Chas. Francel	Salinas City	Exhibit of sign painting	$5 00
Chas. Francel	Salinas City	Exhibit of carriage painting	$5 00
Chas. Francel	Salinas City	Exhibit of carriage painting	
Miss Leona Lloyd	Salinas City	One oil painting	$5 00
Miss Leona Lloyd	Salinas City	One oil painting	
Miss Leona Lloyd	Salinas City	One oil painting	
C. Seighold	Salinas City	One clock picture	
Mrs. J. B. Smith	Salinas City	One lot silverware	$5 00
P. Eitzert	Salinas City	One lot cutlery	$2 50
E. F. Sheaver	Salinas City	One exhibit penmanship	$3 00
Mrs. W. P. Nicholls	Salinas City	One exhibit penmanship	
F. Gater	Salinas City	One lot gunsmith work	$5 00
W. T. Gilkey	Watsonville	One lot stuffed birds	$3 00
Wortemburg & Co.	San Francisco	Peruvian bitters	Diploma
Coleman & Co.	San Francisco	Royal baking powders	Diploma
Mrs. A. E. Richardson	Salinas City	One lot fancy articles	$4 00
Mrs. J. F. Birlem	Salinas City	One lot shells	$2 00
C. W. Cox	Watsonville	One lot domestic dried corn	$1 00
Mrs. S. M. Shearer	Salinas City	One pair silk stockings	$2 00

SPEED PROGRAMME.

THURSDAY, OCTOBER 5TH, 1882.

NO. 1—NOVELTY RUNNING RACE.

One and a quarter miles. First quarter, fifty dollars; second quarter, fifty dollars; third quarter, fifty dollars; fourth quarter, fifty dollars; fifth quarter, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Haddington, b. s.	L. Sharer	Oakland
Bay Charley, b. g.	C. H. Waters	Salinas City
Lallah Cooler, s. g.	Jas. Waters	Salinas City
Quien Sabe, b. g.	Sam'l Duncan	San Benito
Stumbling Dick, b. g.	Alf. Imus	Cholame
Brown Lucy, b. m.	Jas. Hoadley	Soledad

Position at Starting.	*Position at Close.*
1. Bay Charley	Lallah Cooler—Won first quarter.
2. Quien Sabe	Haddington—Won second, third, fourth, and fifth quarters.
3. Stumbling Dick	
4. Brown Lucy	
5. Lallah Cooler	
6. Haddington	

Time—0:23½; 0:50; 1:18; 1:50; 2:16½.

RACE NO. 2—TROTTING.

Mile heats, three in five. For all horses owned in district that have never beaten three minutes. Purse, one hundred and twenty-five dollars. First horse, seventy-five dollars; second horse, thirty-seven dollars and fifty cents; third horse, twelve dollars and fifty cents.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Leland Stanford, b. g.	A. C. Wood	Watsonville
Maggie Vorhees, g. m.	Z. Hebert	Salinas City
Ella A., g. m.	J. A. Hurd	San Juan
Pajaro Chief, b. g.	D. G. Evans	Watsonville
Bay Frank, b. g.	S. K. Trefry	Santa Cruz

Position at Starting.	*Position at Close.*	
1. Bay Frank	Bay Frank	1
2. Leland Stanford	Pajaro Chief	2
3. Maggie Vorhees	Maggie Vorhees	3
4. Ella A.	Ella A.	4
5. Pajaro Chief	Leland Stanford	5

Time—3:05; 2:54; 2:57¾; 2:49¾.

FRIDAY, OCTOBER 6TH, 1882.

RACE NO. 3—TROTTING.

Mile heats, three in five. For all horses owned in the district. Purse, two hundred dollars. First horse, one hundred dollars; second horse, sixty dollars; third horse, forty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Gabilan Joe, b. g.	J. D. Carr	Salinas City
Nell Briody, bl'k m.	E. J. Swift	Santa Cruz
Sorrel Frank, s. g.	R. S. Brown	San Luis Obispo
General Lee, b. s.	J. D. Carr	Salinas City

Position at Starting.		Position at Close.	
1.	General Lee	Gabilan Joe	1
2.	Nell Briody	Sorrel Frank	2
3.	Sorrel Frank	Nell Briody	3
4.	Gabilan Joe		

Time—2:40¼; 2:39½; 2:40¾.

RACE NO. 4—RUNNING.

Half mile heats, two in three. Free for all. Purse, one hundred and fifty dollars. First horse, seventy dollars; second horse, forty dollars; third horse, twenty-five dollars; fourth horse, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Trouble, g. g.	Alf. Imus	Cholame
Bay Charley, b. g.	C. H. Waters	Salinas City
Fanny, s. m.	Wm. Cavanagh	Gonzales
Brown Lucy, b. m.	J. Hoadley	Soledad
Bob, b. s.	R. B. Cockerill	Salinas City

Position at Starting.		Position at Close.	
1.	Brown Lucy	Brown Lucy	1
2.	Trouble	Bay Charley	2
3.	Fanny	Fanny	3
4.	Bay Charley	Trouble	4

Time—0:51¼; 0:52¼.

SATURDAY, OCTOBER 7TH, 1882.

RACE NO. 5—TROTTING.

Mile heats, three in five. For all three-year-olds owned in district. Purse, sixty-two dollars and fifty cents. First horse, thirty-seven dollars and fifty cents; second horse, twenty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Eddy, b. g.	John Paine	Gilroy
Queen Bee, s. m.	O. H. Willoughby	Watsonville
Maggie, g. m.	J. D. Carr	Salinas City
Flora Carr, b. m.	Z. Hebert	Salinas City
Buster, s. g.	H. Falkenberg	Salinas City

Race No. 5—Continued.

Position at Starting.	*Position at Close.*	
1. Eddy	Eddy	1
2. Maggie	Maggie	2

Time—3:26; 3:16; 3:06; 3:09; 3:12¼.

MONDAY, OCTOBER 9TH, 1882.

Race No. 6—Trotting.

Mile heats, three in five. For all stallions owned in the district. Purse, one hundred and fifty dollars. First horse, eighty dollars; second horse, fifty dollars; third horse, twenty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Billy Matthews, b. s.	J. G. Sanchez	San Juan
Carr's Mambrino, b. s.	J. D. Carr	Salinas City
General Lee, bl'k s.	J. D. Carr	Salinas City

Position at Starting.	*Position at Close.*	
1. Billy Matthews	Billy Matthews	1
2. Mambrino	Mambrino	2

Time—2:51½.

Race No. 7—Trotting.

Mile heats, two in three. For all two-year-olds in the district. Purse, one hundred dollars. First horse, sixty dollars; second horse, thirty dollars; third horse, ten dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Tommy, b. s.	Z. Hebert	Salinas City
Billy Donathan, g. s.	J. A. Hurd	San Juan
Salinas Maid, b. m.	J. C. Storm	Salinas City
Hiram Woodruff, Jr., b. s.	Chas. Graver	Salinas City

Position at Starting.	*Position at Close.*	
1. Tommy	Billy Donathan	1
2. Billy Donathan	Tommy	2
3. Salinas Maid	Salinas Maid	3

Time—4:31; 4:29½; 4:16½.

TUESDAY, OCTOBER 10TH, 1882.

RACE NO. 8—TROTTING.

Mile heats, two in three. For all double teams owned in district. First team, eighty dollars; second team, forty-five dollars; third team, twenty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dixie and Sorrel Frank	R. S. Brown	San Luis Obispo
Frank and Nell Briody	E. J. Swift	Santa Cruz
Mack and Joe	J. D. Carr	Salinas City
San Juan Belle and Billy Matthews	J. G. Sanchez	San Juan
Sarpedon and mate	P. Kilburn	Salinas City

Position at Starting.	*Position at Close.*	
1. Frank and Nell Briody	Mack and Joe	1
2. Mack and Joe	San Juan Belle and Billy Matthews	2
3. Dixie and Sorrel Frank	Dixie and Sorrel Frank	3
4. San Juan Belle and Billy Matthews	Frank and Nell Briody	4

Time—2:56; 2:55; 3:01¼; 2:53.

TRANSACTIONS

OF THE

EIGHTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of Nevada, El Dorado, Placer, Amador,
Alpine, and Mono.

OFFICERS OF THE ASSOCIATION.

GEORGE G. BLANCHARD	President
C. H. WEATHERWAX	Secretary
JOHN BLAIR	Treasurer

DIRECTORS.

JAMES ASKEW	El Dorado
P. T. ISBELL	Placerville
THOMAS FRASER	Placerville
JAMES H. MILLER	Latrobe
L. G. NORRIS	Plymouth, Amador County
CYRUS COLEMAN	Markleville, Alpine County
DANA PERKINS	Rocklin, Placer County

THOMAS FRASER	Superintendent of Park and Stock Grounds
JAMES H. MILLER	Superintendent of Pavilion

REPORT.

Placerville, September 20, 1882.

To the honorable the State Board of Agriculture:

Pursuant to the provisions of an Act of the Legislature of the State of California, entitled "An Act to provide for the management and control of the State and District Agricultural Societies by the State," approved April 15, 1880, the Directors of District Agricultural Association No. 8 respectfully submit this their report of the transactions of said Association for the year ending this date.

C. H. WEATHERWAX, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Aug. 22	H. E. Barton, life membership	$ 20 00	
23	Sale of fourteen membership tickets, at $2 50	35 00	
Sept. 4	Sale of twenty membership tickets, at $2 50	50 00	
	Donation of Committee on Ladies' Tournament	10 50	
5	Sale of ninety-eight membership tickets	245 00	
	Gate receipts first day of Fair	25 00	
	Pavilion receipts, first day of Fair	17 00	
	Entry of H. E. Barton to No. 1 race	15 00	
	Entry of J. McBride to No. 1 race	15 00	
	Entry of Dana Perkins to No. 2 race	15 00	
	Entry of Chas. Schlutias to No. 2 race	15 00	
6	Sale of one hundred and twenty-seven membership tickets	317 50	
	Receipts at park second day of Fair	82 75	
	Receipts at pavilion second day of Fair	51 75	
	Entry of Dana Perkins to No. 4 race	15 00	
	Entry of C. Coward to No. 4 race	15 00	
	Entry of A. C. Smith to No. 4 race	15 00	
	Entry of J. C. Brewster to No. 4 race	15 00	
	Entry of H. E. Barton to No. 4 race	15 00	
7	Sale of twenty-eight membership tickets	70 00	
	Receipts of park third day of Fair	73 45	
	Receipts of pavilion third day of Fair	52 50	
	Entry of Caleb Leonard to No. 7 race	12 50	
	Entry of H. E. Barton to No. 7 race	12 50	
	Entry of H. E. Barton to No. 8 race	25 00	
	Entry of A. C. Smith to No. 8 race	25 00	
	Entry of J. McBride to No. 8 race	25 00	
	Entry of J. C. Brewster to No. 8 race	25 00	
8	Sale of five membership tickets	12 50	
	Receipts of park fourth day of Fair	98 75	
	Receipts of pavilion fourth day of Fair	35 00	
	Donation of John McF. Pearson	2 00	
	Commission on pools	35 00	
	Received of Mollie Reynolds—ice cream	25 00	
	Received of Ball Committee	68 50	
	Received of Isaac Eddy, rent of park	62 50	
	Received of Isaac Eddy, rent of park	62 50	
	Sale of hay, bran, and wheat	32 20	
	Received from soda fountain	10 00	
			$1,754 40

Expenditures.

Paid Treasurer as per receipt No. 7	$ 120 00	
Paid Treasurer as per receipt No. 8	120 00	
Paid Treasurer as per receipt No. 9	120 00	
Paid Treasurer as per receipt No. 10	135 00	
Paid Treasurer as per receipt No. 11	100 00	
Paid Treasurer as per receipt No. 12	100 00	
Paid Treasurer as per receipt No. 13	250 00	
Paid Treasurer as per receipt No. 14	175 00	
Paid Treasurer as per receipt No. 15	196 50	
Paid Treasurer as per receipt No. 16	195 75	
Paid Treasurer as per receipt No. 17	62 50	
Paid Treasurer as per receipt No. 18	125 65	
Amount due and not collected	54 00	
		$1,754 40

FINANCIAL CONDITION OF SOCIETY.

December 1, 1883—Indebtedness	$ 4,824 93	
Total orders drawn to date	2,799 60	
		$7,624 53
Receipts for 1881	$ 1,700 40	
Amount due Society	54 00	
Amount due from State	1,200 00	
		$2,954 40
Total indebtedness		$4,670 13
Indebtedness as follows:		
Mortgage on track	$ 2,000 00	
Money borrowed	540 00	
		$2,540 00
Orders drawn and not paid	$ 3,384 00	
Less amount due Society	1,254 00	
		$2,130 13
		$4,670 13

DISBURSEMENTS AND EXPENSES.

Order 268—C. H. Weatherwax, cash advanced for postage, etc.	$ 51 75
269—Isaac Eddy, laying pipe	25 00
270—Charles McCuen, premiums	7 00
271—C. H. Weatherwax, purse in No. 1 race	120 00
272—C. H. Weatherwax, purse in No. 4 race	120 00
273—C. H. Weatherwax, purse in No. 2 race	120 00
274—C. H. Weatherwax, purse in No. 5 race	135 00
275—C. H. Weatherwax, purse in No. 6 race	100 00
276—C. H. Weatherwax, purse in No. 7 race	100 00
277—C. H. Weatherwax, purse in No. 8 race	250 00
278—C. H. Weatherwax, cash advanced—postage and taxes	35 40
279—Jacob Lyon, premium	70 00
280—Mary McCuen, premium	5 00
281—Mollie Reynolds, premium	15 50
282—Mrs. Joseph Lyons, premium	3 00
283—Mrs. J. J. Crippin, premium	3 50
284—Levi Rosier, premium	6 50
285—A. S. Cook, premium	6 50
286—Mrs. S. L. Reynolds, premium	7 50
287—Mrs. James Askew, premium	7 50
288—Mrs. James H. Askew, premium	7 50
289—Thomas Hardie, premium	24 00
290—Thomas Fraser, premium	3 00
291—J. C. Marsh, premium	2 00
292—Mrs. R. Chalmers, premium	13 00

Order 293—C. Bestmann, premium	$	5	00
294—Miss Fannie Stephens, premium		6	50
295—Thomas Fraser, help at park, etc.		132	95
296—C. H. Weatherwax, music		175	00
297—C. H. Weatherwax		67	75
298—Mollie Reynolds, clerk at park		20	00
299—C. H. Weatherwax & Co., merchandise		12	25
300—John Blair, rent of hall and clerks		159	00
301—Fraser, Weatherwax & Blair, interest on mortgage		240	00
302—N. Wonderly, rent of wagon		8	00
303—I. S. Bamber, premium		37	50
304—P. J. Isbell, premium		23	00
305—Henry Tinney, premium		5	00
306—Mrs. I. B. Thomas, premium		2	50
307—Miss Ella McCuen, premium		3	00
308—Wax Bros., premium		3	75
309—Mollie Blair, premium		2	50
310—Charles McCuen, premium		35	25
311—S. R. Tripp, premium		3	50
312—Mrs. J. O'Donnell, premium		4	00
313—Mrs. P. Kramp, premium		7	00
314—Mrs. C. A. Lovel, premium		3	00
315—Wm. Hendrix, premium		17	00
316—James L. Weymouth, premium		6	00
317—Mrs. H. C. Murgotten, premium		2	50
318—Mrs. E. J. Jolly, premium		3	50
319—Miss Sophia Ring, premium		3	50
320—Mrs. W. Hendrix, premium		5	50
321—Miss Lottie Wulff, premium		1	00
322—Mrs. E. Laverty, premium		3	00
323—Mrs. P. J. Isbell, premium		1	00
324—J. W. Dench, premium		2	50
325—J. A. McBride, premium		15	00
326—G. Devore, premium		7	50
327—Bertie Blanchard, premium		15	00
328—J. C. Brewster, premium		17	50
329—Thompson Davis, premium		10	00
330—Miss V. A. M. Tong, premium		2	50
331—H. E. Barton, premium		13	00
332—L. G. Norris, premium		5	00
333—John McF. Pearson, premium		2	50
334—John Bryan, premium		5	50
335—G. L. Tubbs, premium		5	00
336—Dana Perkins, premium		3	00
337—George H. Ingham, premium		2	00
338—James Askew, premium		57	00
339—Joseph Irish, premium		7	50
340—Frank Dickson, premium		7	50
341—C. H. Weatherwax, premium		15	00
342—Milton Lang, premium		5	00
343—A. L. Coombs, premium		15	00
344—Kramp Bros., premium		27	00
345—Nora Donahue, premium		2	50
346—W. A. Selkirk, printing		175	50
347—B. F. Davis, printing		35	00
348—Amador Ledger, printing		15	00
349—Placer Argus, printing		15	00
350—J. & J. Blair, lumber		2	00
351—Mrs. C. H. Weatherwax, Secretary		50	00
352—Grass Valley Union		10	00
353—N. S. & Frank Miller		16	00

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—THOROUGHBRED HORSES.				
Best stallion, four years old	J. A. McBride		Kent	$15 00
Best stallion, two years old	Gideon Devore		Barney	$7 50
Best mare, three years old	Bertie Blanchard		Belle Lodi	$15 00
CLASS II—GRADED HORSES.				
Best graded stallion	J. C. Brewster		Ethan Allen	$10 00
Best stallion, two years old	J. C. Brewster		Albert S.	$7 50
Best colt, one year old	Thompson Davis		Scamperdown	$5 00
Best colt, under one year old	Miss V. A. M. Tong		Victor E.	$2 50
Best mare, three years old	H. E. Barton		Betsy Maguire	$10 00
Best gelding, two years old	H. E. Barton		Ethan	$3 00
Best gelding, three years old and over	L. G. Norris		Rondo	$5 00
Best mare colt	John McF. Pearson		Georgie	$2 50
CLASS III.				
Best mare of all work	Thompson Davis		Nelly	$5 00
Best colt of all work	John Bryant		Young Gold Dust	$3 00
CLASS IV.				
Best roadster	G. S. Tubbs		Rondo	$5 00
CLASS VI.				
Best buggy horse	Dana Perkins		Jack	$3 00
Best saddle horse	Geo. H. Ingham		Dan	$2 00
CLASS I—THOROUGHBRED CATTLE.				
Best Jersey bull, three years old	James Askew		General Grant	$15 00
Best bull, one year old	James Askew		1st Duke of El Dorado	$5 00
Best bull calf	James Askew		2d Duke of El Dorado	$2 50

Best Durham bull	Joseph Irish		Richard 3d	$7 50
Best Jersey bull, two years old	Jacob Lyons		Garfield	$7 50
Best Jersey cow, three years old	James Askew		Jersey Belle	$15 00
Best Jersey cow, two years old	Jacob Lyons		Queenie	$7 50
Best Jersey cow, one year old	James Askew		1st Duchess of El Dorado	$5 00
Best Jersey calf	James Askew		2d Duchess of El Dorado	$2 50
GRADED CATTLE.				
Best cow, three years old	Jacob Lyons			$10 00
Best cow, one year old	James Askew			$5 00
Best calf	Jacob Lyons			$2 50
CLASS II—SHEEP.				
Best pen of sheep	Frank Dixon			$2 50
GOATS.				
Best exhibit of goats	I. S. Bamber			Diploma
Second best	Levi Rosier			Diploma
POULTRY.				
Best Langshans	C. H. Weatherwax			$2 50
Best Buff Cochins	C. H. Weatherwax			$2 50
Best Plymouth Rocks	C. H. Weatherwax			$2 50
Best White Cochins	C. H. Weatherwax			$2 50
Best Game	I. S. Bamber			$2 50
Best White Brahmas	Milton Lang			$2 50
Best Polands	Milton Lang			$2 50
Best Leghorns	James Askew			$2 50
Best Black Spanish	Frank Dixon			$2 50
Best Dominiques	Frank Dixon			$2 50
Best exhibit of poultry	C. H. Weatherwax			$5 00

SECOND DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
MACHINERY.			
		Best fruit drier manufactured in the district, to the "Plummer"	Diploma and $5
		Best fruit drier not manufactured in the district, to the "Zimmerman"	Diploma

THIRD DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
J. W. Dench		Best double team harness	Dip. and $2 50
CLASS II.			
J. W. Denoh		Best lady's saddle	Diploma
CLASS III.			
Dr. W. W. Stone		Best exhibit dental work	Diploma
CLASS IV.			
C. H. Weatherwax & Co.		Best exhibit stoves	Diploma
P. Kramp		Best exhibit willowware	$2 50
C. Bestmann		Best exhibit pottery	$5 00

FOURTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Fannie L. Stephens		Best silk embroidery	$2 50
Nora Donahue		Best cotton embroidery	$2 50
Fannie Stephens		Best linen embroidery	$2 50
Mrs. H. C. Murgotten		Best patchwork quilt	$2 50
Mrs. E. J. Jolly		Best lamp stand mat	$1 00
Mary McCuen		Best made and handsomest dress	$5 00
Mollie Reynolds		Best ottoman cover	$1 50
Mollie Reynolds		Best table cover	$1 50
Mrs. Joseph Lyons		Best hearth rug	$1 00
Sophia Ring		Best tidy	$1 50
Mrs. W. Hendrix		Best comforter	$2 00
Miss Mollie Reynolds		Best and largest display fancy work	$5 00
Mollie Reynolds		Best bead embroidery	$2 50
Sophia Ring		Best feather work	$1 00
Sophia Ring		Best braid work	$1 00
Lottie Wulff		Best needlework picture	$1 00
Mrs. E. Laverty (a lady 78 years old)		Best ten yards rag carpet	$3 00
Mrs. Joseph Lyons		Best cotton stockings	$1 00

Fourth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. P. J. Isbell		Best woolen stockings	$1 00
Georgie Selkirk (6 years old)		Patchwork quilt	Spe. prem. rec.
Susie Lowry		Tidy	Special mention
Allie Donahue		Pillow slip	Special mention
CLASS II.			
Mrs. I. B. Thomas		Best display millinery	$2 50
Miss Ella McCuen		Best calico dress, made and exhibited according to regulations	$3 00
Mrs. E. J. Jolly		Best moss and wax work	$1 00
M. Simon & Son		Display clothing and furnishing goods	Diploma
CLASS IV.			
Modoc Telegraph Company		Best display	Diploma
J. W. Dench		Best exhibit of harness and saddlery	Diploma
J. W. Dench		Best exhibit cutlery	Diploma
F. F. Barss		Best display of silverware and jewelry	Diploma
J. A. Sigwart		Second best display of silverware and jewelry	Diploma
Thomas Alderson		Best display laces and fancy goods	Diploma
J. W. Dench		Best exhibit sewing machines	Diploma
J. W. Dench		Best exhibit guns and pistols	Diploma
J. W. Dench		Best exhibit buggy robes and mats	Diploma
J. A. Sigwart		Best exhibit clocks	Diploma
C. H. Weatherwax & Co.		Best exhibit of cooking stoves and Brighton ranges	Diploma
C. H. Weatherwax & Co.		Best exhibit parlor stoves	Diploma
C. H. Weatherwax & Co.		Best exhibit of tinware and crockeryware	Diploma
City Drug Store		Best exhibit toilet articles	Diploma
Fred. Collins		Best butter refrigerator	Diploma

FIFTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
C. H. McCuen & Wax Bros.		Best wheat	$2 50
Wax Bros.		Best barley	$2 50
Chas. McCuen		Best oats	$2 50
Chas. McCuen		Best rye	$2 50
Chas. McCuen		Best shelled corn	$2 50
James Askew		Best buckwheat	$2 50
Chas. McCuen		Best grass and clover seed	$2 50
John Bryan		Best corn on stalks	$2 50
Jacob Lyon		Second best corn on stalks	$1 50
Chas. McCuen		Best sweet corn	$2 50
Chas. McCuen		Best exhibit of potatoes	$4 00
S. R. Tripp		Second best exhibit of potatoes	$3 00
I. S. Bamber		Third best exhibit of potatoes	$2 00
Jacob Lyon		Fourth best exhibit of potatoes	$1 00
Jacob Lyon		Best new variety of potatoes from seed	$4 00

FIFTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Chas. McCuen		Second best new variety potatoes from seed	$2 00
Kramp Bros.		Best exhibit of onions	$2 50
Chas. McCuen		Second best exhibit of onions	$1 00
Jacob Lyon		Best exhibit of sweet potatoes	$5 00
Chas. McCuen		Second best exh. sweet potatoes	$1 00
Jacob Lyon		Best exhibit tomatoes	$2 00
Chas. McCuen		Second best exhibit tomatoes	$1 00
Chas. McCuen		Best exhibit cabbage	$1 00
Jacob Lyon		Second best exhibit cabbage	50
CLASS II.			
Jacob Lyon		Best watermelons	$1 00
Chas. McCuen		Second best watermelons	50
Jacob Lyon		Best display muskmelons	$1 00
Chas. McCuen		Sec. best display muskmelons	50
Chas. McCuen		Best display parsnips	$1 00
Jacob Lyon		Second best display parsnips	50
Chas. McCuen		Best display carrots	$1 00
Jacob Lyon		Second best display carrots	50
P. J. Isbell		Best display peanuts	$1 00
I. S. Bamber		Best display cucumbers	$1 00
Kramp Bros.		Second best display cucumbers	50
Jacob Lyon		Best display stock beets	$1 00
S. R. Tripp		Second best display stock beets	50
Chas. McCuen		Best display table beets	$1 00
Jacob Lyon		Second best display table beets	50
Jacob Lyon		Best and greatest variety garden vegetables	$5 00
Chas. McCuen		Sec. best dis. garden vegetables	$2 50
I. S. Bamber		Th'd best dis. garden vegetables	$1 50
J. W. Rupeley		Best exhibit squashes	Hon. mention
Ira D. Baker		Second best exhibit squashes	Hon. mention
CLASS III.			
Mrs. J. O'Donnell		Best and largest collection of flowering plants	$4 00
Mrs. E. J. Jolly		Best display of flowers in hanging baskets	$1 50
Chas. McCuen		Best display of flax	$2 50
Chas. McCuen		Best display leaf tobacco	$2 50
CLASS IV.			
Mrs. W. Hendrix		Best ten pounds lard	$1 50
Mrs. P. Kramp		Second best ten pounds lard	$1 00
Mrs. James Askew		Best roll butter	$5 00
Mrs. James H. Askew		Second best roll butter	$2 50
Mrs. James H. Askew		Best firkin butter	$5 00
Mrs. James Askew		Second best firkin butter	$2 50
CLASS V.			
Mrs. W. Hendrix		Best salt rising bread	$2 00
Mrs. C. A. Lovel		Best wheat bread	$1 00
Mrs. P. Kramp		Best corn bread	$1 00
Mrs. P. Kramp		Best rye bread	$1 00
Mrs. P. Kramp		Best graham bread	$1 00
Mrs. C. A. Lovel		Best biscuits	$2 00
Mrs. Fannie Stephens		Best doughnuts	$1 50
Mrs. Joseph Lyons		Second best doughnuts	$1 00
Mrs. P. Kramp		Best and greatest variety bread	$3 00

SIXTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I—APPLES.			
W. Hendrix		Best display apples	$5 00
I. S. Bamber		Second best display apples	$4 00
Jacob Lyon		Third best display apples	$3 00
J. L. Weymouth		Fourth best display apples	$2 00
J. J. Crippen		Fifth best display apples	$1 00
PEACHES.			
Levi Rosier		Best display peaches	$5 00
I. S. Bamber		Second best display peaches	$4 00
Thomas Hardie		Third best display peaches	$3 00
P. J. Isbell		Fourth best display peaches	$2 00
William Hendrix		Fifth best display peaches	$1 00
PEARS.			
I. S. Bamber		Best display pears	$5 00
W. Hendrix		Second best display pears	$4 00
J. L. Weymouth		Third best display pears	$3 00
Thomas Hardie		Fourth best display pears	$2 00
Jacob Lyon		Fifth best display pears	$1 00
PLUMS.			
I. S. Bamber		Best display plums	$5 00
Jacob Lyon		Second best display plums	$4 00
P. J. Isbell		Third best display plums	$3 00
W. Hendrix		Fourth best display plums	$2 00
J. L. Weymouth		Fifth best display plums	$1 00
NECTARINES.			
W. Hendrix		Best display nectarines	$2 50
Jacob Lyon		Second best display nectarines	$1 50
PRUNES.			
Thomas Fraser		Best display prunes	$3 00
W. Hendrix		Second best display prunes	$2 50
Jacob Lyon		Third best display prunes	$2 00
George G. Blanchard		Fourth best display prunes	Diploma
SEEDLING FRUIT.			
Thomas Hardie		Best display seedling fruit	$3 00
I. S. Bamber		Second best disp'y seedling fruit	$2 00
FIGS.			
I. S. Bamber		Best display figs	$3 00
J. C. Marsh		Second best display figs	$2 00
GRAPES.			
Thomas Hardie		Best display grapes	$5 00
Kramp Bros.		Second best display grapes	$3 00
Henry Tinney		Best display table grapes	$5 00
Thomas Hardie		Second best display table grapes	$3 00
Jacob Lyon		Third best display table grapes	$2 00
Kramp Bros.		Best exhibit wine grapes	$5 00
Thomas Hardie		Second best exhibit wine grapes	$3 00
James Askew		Best exhibit blackberries	$2 00
CLASS II—DRIED FRUITS.			
A. L. Coombs		Best 10 pounds dried apples	$2 00
A. L. Coombs		Best 10 pounds dried pears	$2 00
A. L. Coombs		Best 10 ℔s. dried peaches	$2 00
A. L. Coombs		Best 10 ℔s. dried plums	$2 00
P. J. Isbell		Best 10 ℔s. dried nectarines	$2 00
I. S. Bamber		Best 10 ℔s. dried figs	$2 00
A. L. Coombs		Best 10 ℔s. dried prunes	$2 00
A. S. Cook		Best 10 ℔s. dried berries	$2 00

Sixth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
P. J. Isbell		Second best 10 lbs. dried apples	$1 50
P. J. Isbell		Second best 10 lbs. dried pears	$1 50
P. J. Isbell		Second best 10 lbs. dr'd peaches	$1 50
P. J. Isbell		Second best 10 lbs. dried plums	$1 50
A. S. Cook		Second best 10 lbs. dried nectarines	$1 50
A. S. Cook		Second best 10 lbs. dried figs	$1 50
A. S. Cook		Second best 10 lbs. dried prunes	$1 50
Thomas Hardie		Best display of raisins	Diploma and $5
I. S. Bamber		Second best	Diploma and $3
P. J. Isbell		Best display of dried fruits	$5 00
CLASS III.			
Jacob Lyon		Best display English walnuts	$2 50
I. S. Bamber		Best soft shell almonds	$2 50
P. J. Isbell		Best peanuts	$2 50
Levi Rosier		Best exhibit black walnuts	$1 50
Jacob Lyon		Best display cultivated nuts, assorted	$3 00
CLASS IV.			
P. J. Isbell		Best 10 lbs. honey	Dip. and $1 50
Mrs. S. L. Reynolds		Best display preserves	Dip. and $2 50
Mrs. J. J. Crippen		Best display jellies	Dip. and $2 50
Mrs. S. L. Reynolds		Best display hermetically sealed fruit	Dip. and $5 00
CLASS V.			
Kramp Bros.		Best display grape brandy	$5 00
Mrs. R. Chalmers		Second best	$3 00
Mrs. R. Chalmers		Best display grape wine	$5 00
Kramp Bros.		Second best	$3 00
Kramp Bros.		Best display port wine	$3 00
Mrs. R. Chalmers		Second best	$2 00
Kramp Bros.		Best sherry wine	$2 50
Mrs. R. Chalmers		Best blackberry wine	$3 00

SEVENTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Mollie Reynolds		Best oil painting	$5 00
Lillie Crippen		Best penmanship	Diploma
Prof. Lawton		Best pen drawing	Diploma
Cora Merry		Best crayon drawing	Diploma
Mrs. E. J. Jolly		Best wax work	Diploma
		Special mention made of oil paintings by Miss Minnie Irwin (not in competition), and also crayon drawings of Miss Bartholomew and Mrs. Russ; also, special premium recommended for oil painting of Miss Mollie Blair of $2 50.	

SPEED PROGRAMME.

Race No. 1—Running.

Half-mile dash. Free for all. Purse, one hundred and fifty dollars. First horse, one hundred dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Betsy Maguire, b. m., by Bodiark	H. E. Barton	
Red Oak, s. h.; pedigree unknown	J. McBride	

Position at Close.

Betsy Maguire	1
Red Oak	2

Time—0:50¾.

Race No. 2—Trotting.

Three-minute Class. Mile heats, best three in five. Purse, one hundred and fifty dollars. First horse, one hundred dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jack, d. b. h., by Flaxtail; dam, Iowa Chief	Dana Perkins	
Unknown, b. g.	Chas. Schlutias	

Position at Close.

Jack	1	1	1	1
Unknown	2	2	2	2

Time—3:13; 3:00; 2:55; 2:57½.

Race No. 4—Trotting.

Mile heats, best three in five. Free for all. Purse, two hundred and fifty dollars. First horse, one hundred and seventy-five dollars; second horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jack, d. b. h., by Flaxtail; dam, Iowa Chief	Dana Perkins	
Fannie Daniels, b. m.	C. D. Coward	

Position at Close.

Jack	1	1	1
Fannie Daniels	2	2	2

Time—2:49; 2:49½; 2:50.

RACE NO. 5—RUNNING.

Half-mile and repeat. Free for all horses owned in the district July 1st, 1882. Rondo and Red Oak barred. Purse, one hundred and fifty dollars. First horse, one hundred dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Betsy Maguire, b. m., by Bodiark	H. E. Barton	
Dice Box, b. g., by Pill Box	J. C. Brewster	
Billy (formerly Monarch), s. g.	A. C. Smith	

Position at Close.

Betsy Maguire	1	0	1
Dice Box	2	0	2
Billy	3	0	3

Time—0:51; 0:50½.

Second heat declared void by Judges.

RACE NO. 6—TROTTING.

2:40 Class. Half-mile heats, best three in five. Purse, two hundred dollars. First horse, one hundred dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Jack, d. b. h., by Flaxtail; dam, Iowa Chief	Dana Perkins	
Fannie Daniels, b. m.	C. D. Coward	

Position at Close.

Jack	1	1	1
Fannie Daniels	2	2	2

Time—1:27; 1:20½; 1:23½.

RACE NO. 7—RUNNING.

Half-mile dash. Free for all two-year-olds owned in the district prior to July 1st, 1882. Purse, one hundred and twenty-five dollars. First horse, one hundred dollars; second horse, twenty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Barney, s. c., by Norfolk; dam, Pacheton	Caleb Leonard	
Ethan, b. g., by Ethan Allen; dam, Vulcan	H. E. Barton	

Position at Close.

Barney	1
Ethan	2

Time—1:00.

RACE NO. 8—RUNNING.

Mile heats, best two in three. Free for all. Purse, two hundred and fifty dollars. First horse, one hundred and seventy-five dollars; second horse, seventy-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Belle Barton, b. m., by Belmont; dam, Old Weasle	H. E. Barton	
Nelly O'Mally, s. m.	J. McBride	
Dice Box, b. h., by Pill Box	J. C. Brewster	
Billy (formerly Monarch), s. g.	A. C. Smith	

Position at Close.

Belle Barton	2	dis.
Nelly O'Mally	3	3
Dice Box	1	1
Billy	4	2

Time—1:54½; 1:51½.

LADIES' TOURNAMENT.

First lady, first choice; second lady, second choice; third lady, third choice.

Name.	P. O. Address.	Award.
Miss Maggie Kelly		First prize
Mrs. W. C. Anderson		Second prize
Miss V. A. M. Tong		Third prize

BOYS' TOURNAMENT.

Eight prizes—First boy, first choice; second boy, second choice; third boy, third choice, etc.

Name.	P. O. Address.	Award.
Maurice Ingham		First prize
Byron Wonderlich		Second prize
Henry Pratt		Third prize
John Burnham		Fourth prize
Robert Jerrett		Fifth prize
Owen Hopkins		Sixth prize
Henry McCuen		Seventh prize
Dyke Jones		Eighth prize

LADIES' RACE.

RUNNING—Half-mile dash.

Name.	P. O. Address.	Award.
Miss Maggie Kelly		First prize
Mrs. Nevada Clark		Second prize
Mrs. W. C. Anderson		Third prize

Time—1:00.

The undersigned, President and Secretary of El Dorado District Agricultural Association No. 8, hereby certify that the foregoing is a correct list of the premiums awarded at the annual Fair held in Placerville, El Dorado County, on the fifth, sixth, seventh, and eighth of September, 1882; and also a correct report of the financial condition of the Society for the year 1882; also a correct report of the speed programme.

GEO. G. BLANCHARD, President.

C. H. WEATHERWAX, Secretary.

TRANSACTIONS

OF THE

NINTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of Del Norte, Humboldt, and Mendocino.

OFFICERS OF THE ASSOCIATION.

G. C. BARBER	President
S. H. CRABTREE	Secretary
MORRIS LEVINGER	Treasurer

DIRECTORS.

G. C. BARBER	Ferndale
F. Z. BOYNTON	Ferndale
H. S. CASE	Hydesville
ROBERT PORTER	Hydesville
HENRY ROHNER	Springville (Slide P. O.)
DR. JOHN CLARK	Eureka
E. C. NEWTON	Smith River
WM. B. DOBBYN	Rohnerville

REPORT.

ROHNERVILLE, November 30, 1882.

To the honorable the State Board of Agriculture:

GENTLEMEN: The Directors of the Ninth District Agricultural Association submit this their report of the transactions of said Association, for the year ending this date.

S. H. CRABTREE, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

From the State	$ 800 00	
From gate tickets	1,555 25	
From other tickets sold	133 00	
From the ball	151 00	
From entrance fees	193 00	
From privileges	130 00	
	$2,962 25	
Balance against Association, November 30th	28 09	
		$2,990 34

Expenditures.

For printing, advertising, and music	$ 350 50	
For lumber and feed for stock	232 89	
For sundry accounts, as per bills and vouchers in hands of Secretary	623 86	
On purses	790 00	
On premiums	954 00	
	$2,951 25	
Last year's balance against Association	39 09	
		$2,990 34

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—HORSES—THOROUGHBRED STALLIONS.				
Best four years old and over	C. L. Thompson	Camp Grant	Cyclone	$15 00
Best two years old	A. Buhne	Eureka	Morgan Boy	
CLASS II—HORSES OF ALL WORK—STALLIONS.				
Best four years old and over	James W. Miller	Blockburgh	Siroc	$15 00
Second best four years old	Wm. Bohall	Arcata	Siskiyou Fred	$10 00
MARES AND GELDINGS.				
Best four years old and over	John T. Pollard	Ferndale	Fanny	$10 00
Second best four years old and over	L. S. Hurlbutt	Ferndale	May	$5 00
Best two years old	J. R. Jordan	Rohnerville	Lizzie	$8 00
Best one year old	L. S. Hurlbutt	Ferndale	Hickathrift	$7 50
Best suckling colt	L. S. Hurlbutt	Ferndale	Perotita	$5 00
Second best suckling colt	F. Hibbert	Slide P. O.	Siroc	$2 50
CLASS III—DRAFT HORSES—STALLIONS.				
Best four years old and over	James W. Miller	Blockburgh	St. Cloud	$15 00
Best three years old	C. L. Thompson	Camp Grant	Hamlet	$10 00
Best two years old	W. W. Goble	Ferndale	White Cloud	$10 00
MARES AND GELDINGS.				
Best two years old	C. L. Thompson	Camp Grant	Blue Ribbon	$8 00
CLASS IV—ROADSTERS—STALLIONS.				
Best four years old and over	C. Lewis	Ferndale	Robert Bonner	$15 00
Second best four years old and over	Dr. T. D. Felt	Rohnerville	Broz Frog	$10 00
Best two years old	Dr. T. D. Felt	Rohnerville	Go Bang	$10 00

MARES AND GELDINGS.				
Best two years old	J. H. Dunyan	Table Bluff	Lady Jane	$8 00
Second best two years old	C. Lewis	Ferndale	Draco	$4 00
Best one year old	Dr. T. D. Felt	Rohnerville	Frank	$7 50
CLASS V.				
Best matched double team	Wm. Dinsmore	Rohnerville	Morg. and Min	$10 00
Second best matched double team	H. M. Devoy	Eureka		$5 00
CLASS VI.				
Best saddle horse	Edward Hicklin	Rohnerville	Roxy	$5 00
Pair three year old draft horses	J. L. Douglas	Rohnerville	Ned and Pomp	Sp. pre. $8 00
Four year old draft horse	M. J. Falor	Arcata	Dick	Sp. pre. $5 00
Three years old, for all work	J. R. Jordan	Rohnerville	Nellie J.	Sp. pre. $5 00
Three years old, roadster	John Carr	Rohnerville	Mayflower	Sp. pre. $5 00
CLASS VII.				
Best jack	John Blanton	Rohnerville	Andrew	$10 00
CLASS I—DURHAMS.				
Best bull, three years old and over	Jos. Russ	Ferndale	Roderick	$15 00
Second best	A. Buhne	Eureka	Ben	$7 50
Best bull, two years old	A. Buhne	Eureka	Duke	$10 00
Best cow, three years old and over	Jos. Russ	Ferndale	Queen	$10 00
Second best	A. Buhne	Eureka	Sprightly	$5 00
Best cow, two years old	Jos. Russ	Ferndale		$10 00
Best cow, one year old	Jos. Russ	Ferndale		$7 50
Best heifer calf	Jos. Russ	Ferndale	Cherry	$5 00
JERSEYS AND ALDERNEYS IN ONE CLASS.				
Best bull, three years old and over	John T. Pollard	Ferndale	Johnny Murdock	$15 00
Second best	John G. Graham	Hydesville	Moses	$7 50
Best cow, three years old and over	John T. Pollard	Ferndale	Daisy Eyebright	$10 00
Second best	Jas. T. Roberts	Ferndale	Topsy	$5 00
Best cow, two years old	Robert Porter	Hydesville	Lady Kendall	$10 00
Best cow, one year old	Jas. T. Robarts	Ferndale	Diamond	$7 50
Best heifer calf	Robert Porter	Hydesville	Lady Grace	$5 00
AYRSHIRES.				
Best bull, three years old and over	N. Hurlbutt	Ferndale	Scotland	$15 00
Best bull, one year old	N. Hurlbutt	Ferndale	Victor	$7 50
Best heifer calf	N. Hurlbutt	Ferndale		$5 00

First Department—Continued.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
GRADED CATTLE.				
Best bull, three years old and over	Rolla Bryant	Rohnerville	Dick	$7 50
Best bull, two years old	John Carr	Rohnerville	Simon	$7 50
Best bull calf	A. Buhne	Eureka	Hero	$3 00
Best cow, three years old and over	Samuel Huling	Rohnerville	Roany	$5 00
Second best	Rolla Bryant	Rohnerville	Beauty	$2 50
Best cow, two years old	Samuel Huling	Rohnerville	Whitey	$5 00
Best cow, one year old	A. Buhne	Eureka	Dot	$3 00
Best suckling calf	N. Hurlbutt	Ferndale		$2 00
SHEEP.				
Best Cotswold ram	J. R. Jordan	Rohnerville	Sam	$10 00
Best Merino ram	John G. Graham	Hydesville	Don Pedro	$10 00
Best graded ram	J. R. Jordan	Rohnerville	Dick	$10 00
Second best	J. R. Jordan	Rohnerville	Ned	$5 00
Best five ewes—Merino	John G. Graham	Hydesville		$10 00
Second best five ewes—Graded	J. R. Jordan	Rohnerville		$5 00
SWINE.				
Best Poland-China boar	W. G. Curry	Rio Dell	Tim	$5 00
Best Poland-China sow	M. M. McDonald	Rohnerville	Queen	$5 00
Best graded sow	Wm. Bryant	Rohnerville	Bess	$5 00
Best five pigs	Wm. Bryant	Rohnerville		$5 00
POULTRY.				
Best pair chickens—cock and hen	W. G. Curry	Rio Dell		$3 00
Best pair of geese	Rolla Bryant	Rohnerville		$3 00
Best display of poultry	Rolla Bryant	Rohnerville		$5 00
Second best	W. G. Curry	Rio Dell		$2 00

SECOND DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
John S. Brown	Slide P. O.	Best shod horse	$5 00
P. M. & C. L. Johnson	Rohnerville	Best display of leather made in the district	$6 00
Joseph Reynolds	Rohnerville	Best pair calf boots	$3 00
P. M. & C. L. Johnson	Rohnerville	Best pair buckskin gloves	$2 00
James Thompson	Rohnerville	Best display of brick made in the district	$5 00
S. H. Crabtree	Rohnerville	Best lounge	$5 00

THIRD DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Wm. P. Smith	Ferndale	Best five pounds butter	$2 00
Mrs. Wm. Underwood	Slide P. O.	Second best	$1 00
Wm. P. Smith	Ferndale	Best fifty p'ds butter 3 mos. old	$5 00
John Blanton	Rohnerville	Second best	$2 50
C. C. Drake	Rohnerville	Best cheese	$3 00
C. C. Drake	Rohnerville	Second best	$2 00
Jas. Hodge	Rohnerville	Best display of honey in comb	$2 00
Wm. P. Smith	Ferndale	Second best	$1 00
Horace Drake	Rohnerville	Best bushel wheat	$2 00
Jas. Hodge	Rohnerville	Second best	$1 00
H. Drake	Rohnerville	Best bushel barley	$2 00
M. P. Hanson	Rohnerville	Second best	$1 00
Wm. Campton	Rohnerville	Best bushel oats	$2 00
Jas. Hodge	Rohnerville	Second best	$1 00
J. L. Douglas	Rohnerville	Best bushel peas	$2 00
Jas. Hodge	Rohnerville	Second best	$1 00
Jas. Hodge	Rohnerville	Best two sheaves of wheat	$2 00
H. Drake	Rhonerville	Second best	$1 00
Jere. Dale	Rohnerville	Best two sheaves of oats	$2 00
R. Bryant	Rohnerville	Second best	$1 00
Geo. M. Howard	Camp Grant	Best twelve stalks of corn	$2 00
R. Bryant	Rohnerville	Second best	$1 00
M. P. Hanson	Rohnerville	Best dozen beets	$2 00
Jas. Hodge	Rohnerville	Best dozen turnips	$2 00
Ira Doty	Rohnerville	Best dozen carrots	$2 00
M. P. Hanson	Rohnerville	Second best	$1 00
Jas. Hodge	Rohnerville	Best three cabbages	$2 00
Jas. Hodge	Rohnerville	Best three squashes	$2 00
W. V. Woodbridge	Ferndale	Second best	$1 00
W. V. Woodbridge	Ferndale	Best three pumpkins	$2 00
Jas. Hodge	Rohnerville	Best bushel of potatoes	$5 00
W. V. Woodbridge	Ferndale	Best display of potatoes	$5 00
Jas. Hodge	Rohnerville	Second best	$2 50
Geo. M. Howard	Camp Grant	Best display of sweet potatoes	$2 00
M. P. Hanson	Rohnerville	Best display of bacon	$2 00
Boyd Oliver	Rohnerville	Best display of hams	$2 00
M. P. Hanson	Rohnerville	Best display of lard	$2 00
CLASS II.			
Mrs. P. Smith	Rohnerville	Best homemade bread—wheat	$2 00
Miss Alice Hauck	Rohnerville	Second best	$1 00
Mrs. Annie Young	Rohnerville	Best pan of biscuit	$2 00
Mrs. R. Smith	Rohnerville	Second best	$1 00
Mrs. A. J. Tyrrell	Rohnerville	Best display of pastry	$5 00

Third Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS III.			
Mrs. H. Wooldridge	Ferndale	Best display of flowers	$10 00
Miss Nellie Wooldridge	Ferndale	Second best	$5 00
Miss Musa Wooldridge	Ferndale	Best bouquet	$3 00
Mrs. H. Wooldridge	Ferndale	Second best	$2 00
Miss Nellie Wooldridge	Ferndale	Third best	$1 00

FOURTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Amos Hansell & Sons	Camp Grant	Best display fruit of all kinds	$15 00
Peter Hauck	Rohnerville	Second best	$7 50
W. B. Shirely	Camp Grant	Best five varieties of apples	$10 00
Wm. B. Dobbyn	Rohnerville	Second best	$5 00
N. Hurlbutt	Ferndale	Best display of pears	$2 00
Wm. B. Dobbyn	Rohnerville	Best display of peaches	$2 00
G. C. Barber	Ferndale	Best display of quinces	$2 00
Amos Hansell & Sons	Camp Grant	Best display of grapes	$2 00
B. Werner	Rohnerville	Best display of prunes	$2 00
P. Hauck	Rohnerville	Best display of plums	$2 00
CLASS II.			
Mrs. W. H. Bryan	Rohnerville	Best currant jam	$2 00
Mrs. W. H. Bryan	Rohnerville	Best plum jam	$2 00
Mrs. A. M. Gill	Rohnerville	Best raspberry jam	$2 00
Mrs. W. H. Bryan	Rohnerville	Best blackberry jam	$2 00
Mrs. C. A. Campton	Hydesville	Best currant jelly	$2 00
Etta Derr	Rohnerville	Best raspberry jelly	$2 00
Mrs. C. A. Campton	Hydesville	Best apple jelly	$2 00
Mrs. C. A. Campton	Hydesville	Best blackberry jelly	$2 00
Mrs. J. Quick	Hydesville	Best crabapple jelly	$2 00
Mrs. C. A. Campton	Hydesville	Best peach jelly	$2 00
Mrs. J. Quick	Hydesville	Best quince jelly	$2 00
Etta Derr	Rohnerville	Best plum jelly	$2 00
Mrs. A. M. Gill	Rohnerville	Best watermelon preserves	$2 00
Mrs. W. H. Bryan	Rohnerville	Best tomato preserves	$2 00
Mrs. W. H. Bryan	Rohnerville	Best currant preserves	$2 00
Mrs. W. H. Bryan	Rohnerville	Best apricot preserves	$2 00
Mrs. W. H. Bryan	Rohnerville	Best crabapple preserves	$2 00
Mrs. W. H. Bryan	Rohnerville	Best quince preserves	$2 00
Mrs. W. H. Bryan	Rohnerville	Best blackberry preserves	$2 00
Mrs. W. H. Bryan	Rohnerville	Best apple preserves	$2 00
Mrs. A. J. Tyrrell	Rohnerville	Best pear preserves	$2 00
Mrs. A. J. Tyrrell	Rohnerville	Best cherry preserves	$2 00
Mrs. A. M. Gill	Rohnerville	Best peach preserves	$2 00
Miss Etta Derr	Rohnerville	Best apple butter	$2 00
Miss Etta Derr	Rohnerville	Best peach butter	$2 00
Miss M. Oliver	Rohnerville	Best plum butter	$2 00
Miss Etta Derr	Rohnerville	Best tomato butter	$2 00
Mrs. W. H. Bryan	Rohnerville	Best display of preserves	$5 00
Mrs. W. H. Bryan	Rohnerville	Best display of jams	$5 00
Mrs. C. A. Campton	Hydesville	Best display of jellies	$5 00
Mrs. W. H. Bryan	Rohnerville	Best display of butter	$5 00
Mrs. A. M. Gill	Rohnerville	Best display fresh canned fruits	$5 00
Mrs. J. Quick	Hydesville	Second best	$2 50
Wm. B. Dobbyn	Rohnerville	Best display dried apples	$2 00
Mrs. P. Derr	Rohnerville	Best display dried plums	$2 00

FOURTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. P. Derr	Rohnerville	Best display dried prunes	$2 00
Wm. B. Dobbyn	Rohnerville	Best display dried peaches	$2 00
Mrs. P. Derr	Rohnerville	Second best	$1 00
Mrs. P. Derr	Rohnerville	Best display dried currants	$2 00
G. C. Barber	Ferndale	Best display dried fruits	$5 00

FIFTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
CLASS I.			
Mrs. Wm. Underwood	Slide P. O.	Best rag carpet	$5 00
Mrs. H. Wooldridge	Ferndale	Second best	$2 50
Mrs. C. Bohall	Arcata	Best embroidered rug	$3 00
Mrs. H. D. Bendixen	Eureka	Best worsted rug	$3 00
Mrs. C. Bohall	Arcata	Second best	$1 50
Mrs. H. C. Snow	Eureka	Best pillow shams	$2 00
Mrs. Isabel Brown	Hydesville	Second best	$1 00
Mrs. Annie Young	Rohnerville	Best patched garment	$1 00
Mrs. James Thompson	Rohnerville	Best specimen of hand-sewing	$3 00
Mrs. J. Williams	Hydesville	Best sofa pillow	$2 00
Miss Nellie Case	Hydesville	Best bedspread	$2 00
Mrs. M. Rich	Ferndale	Second best	$1 00
Mrs. Ellen Galloway	Ferndale	Best child's dress	$2 00
Annie Smith	Rohnerville	Best patchwork by girl under 12 years old	$2 00
Maggie Jordan	Rohnerville	Second best	$1 00
Mrs. A. G. Robinson	Rohnerville	Best arranged log cabin quilt	$5 00
Mrs. C. Bohall	Arcata	Second best	$2 50
Mrs. Elvira Knowles	Hydesville	Best patchwork quilt, worsted	$4 00
Mrs. J. Van Duzer	Slide P. O.	Best patchwork quilt, cotton	$4 00
Mrs. M. Rich	Ferndale	Second best	$2 00
Mrs. Ira Doty	Rohnerville	Best comfort	$2 00
Mrs. Ira Doty	Rohnerville	Second best	$1 00
Mrs. J. Van Duzer	Slide P. O.	Best specimen of quilting	$3 00
Mrs. Ira Bresee	Rohnerville	Second best	$1 50
CLASS II—EMBROIDERY, CROCHET, ETC.			
Miss M. M. Barksdale	Table Bluff	Best worsted crochet tidy	$3 00
Miss M. M. Barksdale	Table Bluff	Second best	$1 50
Miss M. M. Francis	Ferndale	Best cotton crochet tidy	$3 00
Miss M. M. Francis	Ferndale	Second best	$1 50
Mrs. A. H. Bradford	Rohnerville	Best knit tidy	$3 00
Mrs. Ira Doty	Rohnerville	Second best	$1 50
Miss Jessie Ellery	Eureka	Best canvas tidy	$3 00
Miss Etta Derr	Rohnerville	Second best	$1 50
Mrs. O. Mills	Ferndale	Best toilet set, crochet	$2 00
Mrs. O. Mills	Ferndale	Second best crochet toilet set	$1 50
Mrs. L. A. Seidell	Slide P. O.	Best toilet set on canvas	$1 00
Mrs. H. S. Case	Hydesville	Second best	50
Miss M. M. Barksdale	Table Bluff	Best lamp mat	$1 00
Mrs. E. Galloway	Ferndale	Best embroidered infant's dress	$2 00
Mrs. A. J. Tyrrell	Rohnerville	Best embroidered infant's skirt on flannel	$2 00
Mrs. E. Galloway	Ferndale	Second best	50
Mrs. E. Galloway	Ferndale	Best embroidered chemise	$2 00
Mrs. E. Galloway	Ferndale	Second best	50
Mrs. E. Galloway	Ferndale	Best embroidered collar	$1 00
Mrs. E. Galloway	Ferndale	Second best	50

Fifth Department—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. E. Galloway	Ferndale	Best embroidered pair of gloves	$1 00
Mrs. A. J. Tyrrell	Rohnerville	Best silk embroidery	$1 00
Mrs. Ellen Galloway	Ferndale	Second best	50
Miss A. Olmstead	Hydesville	Best worsted embroidery	$1 00
Miss A. Olmstead	Hydesville	Second best	50
Mrs. E. Galloway	Ferndale	Best cotton embroidery	$1 00
Mrs. E. Galloway	Ferndale	Second best	50
Mrs. Annie Young	Rohnerville	Best toilet cushion	$1 00
Miss M. M. Francis	Ferndale	Second best	50
Mrs. E. M. Read	Rohnerville	Best tatting	$1 00
Mrs. Ira Bresee	Rohnerville	Second best	50
Mrs. A. G. Robinson	Rohnerville	Best braiding	$1 00
Mrs. Isabel Brown	Hydesville	Second best	50
Miss M. J. Stoddard	Ferndale	Best point lace	$5 00
Mrs. G. C. Barber	Ferndale	Second best	$2 50
CLASS III—ORNAMENTAL AND FANCY WORK.			
Mrs. A. H. Bradford	Rohnerville	Best agricultural wreath	$2 00
Mrs. E. McKinnon	Hydesville	Best worsted wreath	$2 00
Mrs. E. McKinnon	Hydesville	Best display of zephyr flowers	$2 00
Mrs. T. W. Crosbie	Ferndale	Best display on cardboard	$2 00
Mrs. Annie Young	Rohnerville	Second best	$1 00
Mrs. Annie Young	Rohnerville	Best display of hanging baskets	$1 00
Miss Ida Ely	Hydesville	Best display of air castles	$2 00
Mrs. Annie Young	Rohnerville	Second best	50
CLASS IV—PAINTING, DRAWING, ETC.			
Miss Nellie Watson	Eureka	Best water colors	$5 00
Miss Nellie Watson	Eureka	Second best	$2 50
Miss Addie Olmstead	Hydesville	Best pencil drawing	$5 00
Miss Addie Olmstead	Hydesville	Second best	$2 50
Mrs. A. E. Gates	Eureka	Best crayon drawing	$5 00
Mrs. A. E. Gates	Eureka	Second best	$2 50
Miss Addie Olmstead	Hydesville	Best specimen of penmanship	$2 50
Miss Docia Curry	Rio Dell	Second best	$1 00
Miss Hattie Ellery	Eureka	Best specimen penmanship by girl under 16 years	$5 00
Frank Luther	Eureka	Best specimen fret sawing by amateur	$5 00
Willie Barber	Ferndale	Second best	$2 50
Mrs. Chas. Perrott	Rohnerville	Best display of canary birds in cage	$5 00
Mrs. M. Van Sickle	Rohnerville	Second best	$2 50

SPEED PROGRAMME.

TUESDAY, SEPTEMBER 19TH, 1882.

RACE NO. 1—RUNNING.

Half-mile and repeat. Free for all saddle horses that have never run for money—catch weights. Purse, forty dollars. First horse, thirty dollars; second horse, ten dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Nellie C., b. m.	J. H. Goff	Petrolia
Gray Nell	T. Ed. Palmer	Bridgeville
Kit, b. m.	G. Johnson	Upper Mattole

Nellie C. won in one straight heat.

Time—1:06.

WEDNESDAY, SEPTEMBER 20TH, 1882.

RACE NO. 2—RUNNING.

Half-mile and repeat. Free for all. Purse, one hundred dollars. First horse, seventy-five dollars; second horse, twenty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Quebec, s. h.	L. Gilligan	Slide P. O.
Don Pedro, s. g.	W. L. Ramey	Willit's
Jim Lick, b. g.	Harry Storer	Arcata

First and second heats won by Quebec.

Time—0:52.

RACE NO. 3—RUNNING.

Half-mile and repeat. Mule race. Purse, thirty dollars. First mule, twenty dollars; second mule, ten dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dixey	W. S. Lamb	Rohnerville
Jack	Thos. P. Hopper	Willit's
No name	H. Levinger	Rohnerville

Won by Jack.

Time—1:26½; 1:28.

THURSDAY, SEPTEMBER 21st, 1882.

Race No. 4—Running.

Mile heats, two in three. Free for all. Purse, one hundred and fifty dollars. First horse, one hundred dollars; second horse, fifty dollars.

This did not fill, and a made up race for a purse of fifty dollars, running half-mile and repeat, was substituted.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Aleck	L. Gilligan	Slide P. O.
Nellie Beckwith	L. C. Beckwith	Hydesville
Buffalo Bill	A. Gissman	Rio Dell

Won by Nellie Beckwith.

Time—0:56; 0:53½.

Race No. 5—Trotting.

Mile heats, two in three, to harness and to rule, for following mentioned horses: Dr. Gross' Molly McCracken, Devoy's Bruno, Dinsmore's Rowena, Roberts' Overland, Lewis' Rob't Bonner. Purse, one hundred and fifty dollars. First horse, one hundred dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Overland	W. S. Barmer	Rohnerville
Robert Bonner	Curtis Lewis	Ferndale
Rowena	H. Levinger	Rohnerville

Won by Overland.

Time—2:41; 2:40½.

Race No. 6—Running.

Single dash of one mile. Free for all saddle horses that have never run for money. Purse, forty dollars. First horse, thirty dollars; second horse, ten dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Nellie C., b. m.	J. H. Goff	Petrolia
Nellie, s. m.	J. Shaw	Iaqua
Johnny, b. g.	Wm. Barlow	Bridgeville

Won by Johnny.

Time—2:14.

FRIDAY, SEPTEMBER 22D, 1882.

LADIES' EQUESTRIANSHIP.

Purse, thirty dollars. First, fifteen dollars; second, ten dollars; third, five dollars.

Name.	P. O. Address.	Award.
Miss Clara E. Dinsmore	Rohnerville	$15 00
Mrs. James Palmer	Bridgeville	$10 00
Mrs. Sarah Geitner	Petrolia	$5 00

RACE No. 7—TROTTING.

Free for all. Mile heats, three in five. Purse, two hundred dollars. First horse, one hundred and fifty dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Overland	Wm. S. Barnum	Rohnerville
Robert Bonner	Curtis Lewis	Ferndale
Pete, b. g.	J. G. Graham	Hydesville

Time—Won by Robert Bonner; 2:38; 2:35½; 2:38.

RACE No. 8—RUNNING.

Novelty race. Free for all, weights for age. One mile dash. Purse, one hundred and fifty dollars. First horse to first quarter pole, thirty dollars; first horse to second quarter pole, thirty dollars; first horse to third quarter pole, forty dollars; first horse to last quarter pole, fifty dollars—that is, the horse that first reaches a quarter pole wins money. If a horse reaches all the quarter poles and home first, that horse wins the whole purse.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
American Girl, b. m.	I. B. Barnes	Ferndale
James Lick, b. g.	H. Storer	Arcata
Quebec, s. g.	L. Gilligan	Slide P. O.

First quarter taken by James Lick; second, third, and fourth by Quebec.

TRANSACTIONS

OF THE

TENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of Siskiyou, Trinity, and Shasta.

REPORT.

Yreka, December 1, 1882.

To the honorable the State Board of Agriculture:

Gentlemen: The Directors of the Tenth District Agricultural Association submit this their report of the transactions of said Association, for the year ending this date.

J. H. MAGOFFEY, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

Badges	$ 426 00	
Entries	549 00	
Bar	471 90	
Privileges	88 00	
Pools	228 62	
Gate	350 50	
State	800 00	
Borrowed on note from Siskiyou Agricultural Society	600 00	
Borrowed from Siskiyou Agricultural Society	188 76½	
		$3,702 78½

Expenditures.

Purses and premiums	$ 2,233 00	
Paid vouchers	1,145 10½	
		$3,375 10½

RECAPITULATION.

On hand December 1, 1881, $248 08, less $58 12½ due Siskiyou Agricultural Society	$ 189 91½	
Total receipts	3,702 78½	
		$3,892 70
Total expenditures		3,378 10½
Balance		$514 59½
Total amount borrowed		$688 76½
On hand		514 59½
Balance indebtedness		$174 17

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS II—GRADED HORSES.				
Graded stallion	A. D. Richards	Yreka	Fred	$30 00
Graded mare	E. Flitner	Yreka	Nettie Mack	$20 00
CLASS III—HORSES OF ALL WORK.				
Best stallion, three years old	Anton Joseph	Willow Creek	George	$20 00
Best mare, three years old	James Magill	Fort Jones	Dollie	$15 00
CLASS IV—DRAFT HORSES.				
Stallion, three years old	J. Davidson	Fort Jones	George	$20 00
Mare, three years old	James Magill	Fort Jones	Queen	$15 00
CLASS V—ROADSTERS.				
Best single roadster	George Fried	Yreka	Nig	$30 00
CLASS VI—ROADSTER TEAM.				
Best roadster team	S. Jackson	Edgwood	Pete and Lady Thorne	$25 00
CLASS VIII.				
Best colt, two years old or under	S. Richardson	Willow Creek	Bolger Dick	$15 00
CLASS IX—JACKS AND MULES.				
Best span mules	J. F. Simeox	Mt. Shasta		$20 00

SECOND DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I.				
Best Devonshire cow	J. R. Kenyon	Fort Jones	Belle	$15 00
CLASS II—SWEEPSTAKES.				
Best cow of any age or breed	J. R. Kenyon	Fort Jones	Belle	$10 00
Best graded cow	F. Riley	Yreka	Dolly	$10 00

THIRD DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—SHEEP.				
Best ram, two years old and over	Geo. Fiock, Jr.	Shasta River		$15 00
Best ram, under two years	Geo. Fiock, Jr.	Shasta River		$5 00

FOURTH DEPARTMENT.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—SWINE.				
Best boar, one year old and over	W. J. Cleland	Mount Shasta	Romeo	$10 00
Best sow, any age	W. J. Cleland	Mount Shasta	Lotta	$10 00

FIFTH DEPARTMENT.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
CLASS I—POULTRY.				
Poland chickens	C. Schock	Yreka		$2 00
Whitehead pigeons	C. Schock	Yreka		$2 00
Black Chaffee chickens	L. Huseman	Yreka		$2 00

SIXTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Nehrbass & Harmon	Yreka	Top buggy	$8 00
Jessie Churchill	Yreka	Scroll work	$2 50
Arthur Scheld	Yreka	Scroll work—special	$1 50

SEVENTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. S. A. Burrows	Yreka	Largest and best exhibit in department	$10 00
Mollie Cleland	Yreka	Silk ottoman cover	$2 50
Leonora Huseman	Yreka	Worsted crochet shawl	$2 00
Mollie Cleland	Yreka	Crochet collar	$2 00
Mrs. Iffland	Yreka	Chenille and silk embroidery	$3 00
Mrs. S. A. Burrows	Yreka	Table spread	$2 00
Anna McNulty	Yreka	Cotton embroidery	$2 00
Mrs. S. A. Burrows	Yreka	Applique work	$1 50
Amelia Huseman	Yreka	Silk tidy	$1 50
Aggie Vance	Yreka	Wax work	$2 50
Mary Pashburg	Yreka	Sofa pillow	$2 50
Anna McNulty	Yreka	Hair wreath	$2 50
Mrs. Dr. Ream	Yreka	Raised worsted work	$5 00
Mrs. Hess	Yreka	Applique quilt	$5 00
Mrs. Vetterlein	Yreka	White quilt	$2 50
Mrs. Fellows	Berryvale	Worked quilt	$2 50
Mrs. Vetterlein	Yreka	Knitted quilt	$2 50
Mrs. Fellows	Berryvale	Silk quilt	$5 00
Mrs. G. A. Nordheim	Yreka	Patchwork quilt	$2 50
Katy Duenkel	Yreka	Woolen stockings	$1 00
Mrs. Vetterlein	Yreka	Fancy knitting	$1 00
Mrs. C. C. Cornish	Yreka	Foot mat	$1 50
Mrs. C. C. Cornish	Yreka	Ladies' underclothes, hand-sewing	$5 00
Mrs. H. B. Green	Yreka	Gent's shirt, hand-sewing	$3 00
Mrs. H. B. Green	Yreka	Hand tucking	$1 50
Mrs. C. C. Cornish	Yreka	Wool rolls	$1 00
Mrs. H. Richardson	Willow Creek	Woolen yarn	$1 00
Mrs. H. Richardson	Willow Creek	Woolen gloves and mittens	$2 50
Mrs. E. Hess	Yreka	Patching	$1 00
Martha Knight	Near Yreka	Java canvas tidy	$1 50
Addie Warren	Yreka	Honeycomb canvas tidy	$1 50
Carrie Swan	Yreka	Railroad canvas tidy	$1 50
Mary Pyle	Yreka	Splasher	$1 50
Carrie Swan	Yreka	Footstool	$1 50
Mrs. Dr. Robertson	Yreka	Rug and lamp mats	$1 50
Emma Schock	Yreka	Card frames	$1 00
Pearl Brown	Yreka	Hair watch chain	$2 00
Minnie Klinge	Yreka	Drawn rug	$2 50
Aggie Vance	Yreka	Lace embroidery	$2 00
Mrs. A. H. Burrows	Yreka	Fern cross	$1 00
Carrie Swan	Yreka	Feather wreath	$2 50
Aggie Vance	Yreka	Autumn cross	$1 00
Mrs. A. H. Burrows	Yreka	Fern picture	$1 50
Tina Klinge	Yreka	Cornucopias	$1 00
Aggie Vance	Yreka	Bead chain	$1 50
Mrs. Iffland	Yreka	Millinery	$3 00
Mrs. E. H. Schofield	Yreka	Skeleton wreath	$1 50

EIGHTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
H. Davis	Mt. Shasta	Firkin butter	$5 00
Mrs. Orr	Shasta Valley	Beeswax	$1 00
Mrs. A. H. Burrows	Yreka	Home-made bread	$3 00
Mrs. T. G. Young	Yreka	Raised biscuit	$2 00
Martha Knight	Near Yreka	Brown bread	$2 00
Mrs. E. H. Schofield	Yreka	Pound cake	$3 00
Mary Pashburg	Yreka	Jelly cake	$2 00
Mrs. H. Repp	Yreka	Fruit cake	$3 00
Minnie Pashburg	Yreka	Sponge cake	$1 00
Mrs. Orr	Shasta Valley	Honey	$2 00
Martha Knight	Near Yreka	Canned tomatoes	$1 00
Katy Duenkel	Yreka	Canned raspberries	$1 00
Mrs. Iffland	Yreka	Canned peaches	$1 00
Mrs. Pashburg	Yreka	Canned pears	$1 00
Mrs. Pashburg	Yreka	Canned cherries	$1 00
Martha Knight	Near Yreka	Canned currants	$1 00
Mrs. Pashburg	Yreka	Canned strawberries	$1 00
Mrs. R. Nixon	Yreka	Canned plums	$1 00
Martha Knight	Near Yreka	Currant jelly	$1 50
Martha Knight	Near Yreka	Apple jelly	$1 50
Dora Duenkel	Yreka	Plum jelly	$1 50
Mrs. Pashburg	Yreka	Grape jelly	$1 50
Mrs. H. Repp	Yreka	Crabapple jelly	$1 50
Mrs. R. Nixon	Yreka	Tomato catsup	$1 50
Lulu Vance	Yreka	Pickled cucumbers	$1 00
Martha Knight	Near Yreka	Pickled peaches	$1 00
Martha Knight	Near Yreka	Pickled tomatoes	$1 00
Mrs. Iffland	Yreka	Pickled mangoes and melons	$1 00
Mrs. H. Repp	Yreka	Pickled onions	$1 00
Carrie Swan	Yreka	Fresh crabapples	$1 00
Mary Pyle	Yreka	Raspberry jelly	$1 50
Katy Duenkel	Yreka	Cherry jelly	$1 50
Mrs. E. H. Schofield	Yreka	Grape catsup	$1 50
Martha Knight	Near Yreka	Currant catsup	$1 50
Mrs. H. Repp	Yreka	Pickled cauliflower	$1 00
Mrs. R. Nixon	Yreka	Chowchow	$1 00
Mrs. H. Richardson	Willow Creek	Pickled peppers	$1 00
Mrs. R. Nixon	Yreka	Chili sauce	$1 00
Martha Knight	Near Yreka	Pickled pears	$1 00
Carrie Swan	Yreka	Pickled grapes	$1 00
Mrs. H. Repp	Yreka	Pickled cabbage	$1 00
Lulu Vance	Yreka	Pickled plums	$1 00
Mrs. Repp	Yreka	Brandied pears	$1 00
Martha Knight	Near Yreka	Brandied peaches	$1 00
Martha Knight	Near Yreka	Spiced tomatoes	$1 00
Mrs. A. H. Burrows	Yreka	Currant jam	$1 00
Aggie Vance	Yreka	Raspberry jam	$1 00
Mrs. T. G. Young	Yreka	Tomato preserves	$1 00
Mrs. E. V. Brown	Yreka	Unique preserves	$1 00
Aggie Vance	Yreka	Citron preserves	$1 00

JUVENILE DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Nellie Junker	Yreka	Crochet lace	$1 50
Minna Klinge	Yreka	Crochet tidy	$1 50
Nellie Junker	Yreka	Patchwork	$1 00
Martha Shearer	Yreka	Wool embroidery	$1 00
Minnie Pashburg	Yreka	Knit hose	$1 00
Nellie Junker	Yreka	Hand sewing	$2 00
Nellie Junker	Yreka	Pincushion	$1 00
Nellie Junker	Yreka	Java canvas tidy	$1 50
Emma Stockslager	Yreka	Honeycomb tidy	$1 50
Nellie Junker	Yreka	Card frames	$1 00
Lena Burrows	Yreka	Sofa cushion	$2 50
Annie Wheeler	Yreka	Motto	$1 00
Emma Stockslager	Yreka	Sofa cushion	$1 00
Clara B. Burrows	Yreka	Card frames	$1 00
Tina Klinge	Yreka	Rug	$2 50
Mary McNulty	Yreka	Hair receiver	$1 00
Emma Duenkel	Yreka	Beetles	$1 50
Gertie Nixon	Yreka	Broomholder	$1 00
Clara B. Burrows	Yreka	Cake	$2 00
Gertie Nixon	Yreka	Biscuit	$1 00
Emma Stockslager	Yreka	Biscuit	$1 00
Emma Stockslager	Yreka	Plum preserves	$1 50
Emma Stockslager	Yreka	Tomato preserves	$1 50
Tina Klinge	Yreka	Best penmanship, under 15 yrs.	$2 50
Tina Klinge	Yreka	Sweepstakes penmanship	$5 00

NINTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Sam. Jackson	Edgwood	Bacon	$5 00
H. Davis	Mt. Shasta	Wheat	$5 00
S. Jackson	Edgwood	Barley	$5 00
S. Jackson	Edgwood	Oats	$5 00
S. Jackson	Edgwood	Indian corn	$2 50
S. Jackson	Edgwood	Early potatoes	$5 00
H. Davis	Mt. Shasta	Winter potatoes	$5 00
J. R. Kenyon	Fort Jones	Beets	$2 50
J. R. Kenyon	Fort Jones	Cabbage	$2 50
F. Riley	Yreka	Cauliflower	$2 50
Mrs. Fellows	Berryvale	Turnips	$2 50
S. Jackson	Edgwood	Squash	$5 00
M. Pereira	Fort Jones	Cheese	$5 00
L. Huseman	Yreka	Currant wine	$2 00
Mrs. Orr	Shasta Valley	Vinegar	$2 00
H. L. Davis	Mt. Shasta	Lard	$2 00
Short & Co.	Forest House	Best ten varieties apples	$5 00
S. Jackson	Edgwood	Best three varieties apples	$3 00
E. Pope	Klamath Riv'r	Peaches	$2 50
E. Pope	Klamath Riv'r	Grapes	$2 50
Mrs. H. L. Davis	Mt. Shasta	Plums	$2 50

TENTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Fannie Mathews	Yreka	Crayon drawing	$5 00
Mrs. Dr. Ream	Yreka	Pencil drawing	$5 00
Amelia Huseman	Yreka	Oil painting	$10 00
Katy Duenkel	Yreka	Collection butterflies	$1 00
Fannie Mathews	Yreka	Painting in water colors	$5 00

ELEVENTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Addie Warren	Yreka	Minerals of Siskiyou County	$5 00
H. Richardson	Willow Creek	Stone coal	$2 50

TWELFTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. Geo. Fried	Yreka	Collection cut flowers	$2 50
Mrs. C. H. Pyle	Yreka	House plants	$5 00
Minna Klinge	Yreka	Bouquet	$1 00
Mrs. C. H. Pyle	Yreka	Foliage plants	$5 00
Mrs. A. H. Burrows	Yreka	Fuchsia (special)	$1 00
Mrs. C. H. Pyle	Yreka	Orange tree (special)	$2 00
Mrs. A. H. Burrows	Yreka	Smilax and begonia (special)	$1 00

SPEED PROGRAMME.

MONDAY, SEPTEMBER 18TH, 1882.

RACE NO. 1—TROTTING.

2:35 Class. Mile heats, three in five. Purse, two hundred dollars. First horse, one hundred and twenty dollars; second horse, sixty dollars; third horse, twenty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
William Tell	C. H. Lawrence	Greenville
Roanoke	Chas. Sherman	Oroville
Plowboy	R. N. Smith	Quincy

Position at Starting.	*Position at Close.*	
1. Roanoke	Roanoke	1
2. Plowboy	Plowboy	2

William Tell drawn.

Time—2:46¼.

RACE NO. 2—RUNNING.

Mile heats. Three-year-olds. Free for district colts. Purse, one hundred and fifty dollars. First horse, ninety dollars; second horse, forty-five dollars; third horse, fifteen dollars.

This race did not fill. Entrance money returned.

RACE NO. 3—TROTTING.

Mile heats. Two-year-olds. Purse, one hundred and fifty dollars. First horse, ninety dollars; second horse, forty-five dollars; third horse, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Dora R.	H. M. Kingsbury	Quincy
June	Howard Hall	Greenville
Mollie	R. N. Smith	Quincy

Position at Starting.	*Position at Close.*	
1. Mollie	Mollie	1
2. June	June	2

Dora R. drawn.

Time—5:05.

TUESDAY, SEPTEMBER 19TH, 1882.

RACE NO. 4—TROTTING.

Three-minute Class. Mile heats, three in five. Purse, one hundred and fifty dollars. First horse, ninety dollars; second horse, forty-five dollars; third horse, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Mollie Barnes	H. M. Kingsbury	Quincy
Red Cloud	Sam. Lee	Quincy
Billy	Robert Smith	Quincy
J. D.	D. D. Munroe	Susanville

	Position at Starting.	*Position at Close.*	
1.	Mollie Barnes	Molly Barnes	1
2.	Billy	Billy	2

Red Cloud and J. D. drawn.

Time—3:28.

RACE NO. 5—RUNNING.

Mile heats, three in five. Purse, two hundred dollars. First horse, one hundred and twenty dollars; second horse, sixty dollars; third horse, twenty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Red Light	Sam Gowan, Jr.	Greenville
Snuff box	Joe Dyson	Sierraville
Overland Pat	D. D. Neuman	Sierraville

	Position at Starting.	*Position at Close.*	
1.	Overland Pat	Overland Pat	1
2.	Snuffbox	Snuffbox	2
3.	Red Light	Red Light	dis.

RACE NO. 6—RUNNING.

Half-mile dash. Purse, fifty dollars. First horse, forty dollars; second horse, ten dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lillie Odett	Sam. Gowan, Jr.	Greenville
Nellie G.	D. D. Munroe	Susanville
Nellie Banta	C. W. Cole	Greenville
Summit	Joe Dyson	Sierraville
Rose Bollinger	D. D. Neuman	Sierraville

	Position at Starting.	*Position at Close.*	
1.	Lillie Odett	Rose Bollinger	1
2.	Nellie Banta	Nellie Banta	2
3.	Nellie G.		
4.	Summit		
5.	Rose Bollinger		

Time—0:55.

WEDNESDAY, SEPTEMBER 20TH, 1882.

Race No. 7—Trotting.

2:30 Class. Mile heats, three in five. Purse, two hundred and fifty dollars. First horse, one hundred and fifty dollars; second horse, seventy-five dollars; third horse, twenty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
William Tell	C. H. Lawrence	Greenville
Belle Spencer	E. V. Spencer	Susanville
Carlisle	Chas. Sherman	Chico

Position at Starting.	*Position at Close.*	
1. Belle Spencer	Carlisle	1
2. Carlisle	Belle Spencer	2

William Tell drawn.

Time—2:38.

Race No. 8—Running.

Half-mile heats. Purse, one hundred dollars. First horse, sixty dollars; second horse, thirty dollars; third horse, ten dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lillie Odett	Sam. Gowan, Jr.	Greenville
Nellie Banta	C. W. Cole	Greenville
Snuffbox	Joe Dyson	Sierraville
Rose Bollinger	D. D. Neuman	Sierraville

Position at Starting.	*Position at Close.*	
1. Nellie Banta	Nellie Banta	1
2. Rose Bollinger	Rose Bollinger	2
3. Snuffbox	Snuffbox	3

Lillie Odett drawn.

Time—0:52.

Race No. 9—Double Team Trot.

Two-mile dash. Free for all. Purse, fifty dollars. First team, forty dollars; second team, ten dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Plowboy and mate	C. H. Lawrence	Greenville
Roanoke and mate	Chas. Sherman	Chico
Mollie Barnes and mate	H. M. Kingsbury	Quincy

Position at Starting.	*Position at Close.*	
1. Roanoke and mate	Roanoke and mate	1
2. Mollie Barnes and mate	Mollie Barnes and mate	2
3. Plowboy and mate	Plowboy and mate	dis.

Time—7:20.

THURSDAY, SEPTEMBER 21ST, 1882.

RACE NO. 10—TROTTING.

2:40 Class. Mile heats; best three in five. Purse, one hundred and fifty dollars. First horse, ninety dollars; second horse, forty-five dollars; third horse, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Plowboy	C. H. Lawrence	Greenville
Mollie Barnes	H. M. Kingsbury	Quincy
Roanoke	Chas. Sherman	Chico

Position at Starting.	*Position at Close.*	
1. Mollie Barnes	Roanoke	1
2. Plowboy	Plowboy	2
3. Roanoke	Mollie Barnes	3

Time—2:41.

RACE NO. 11—RUNNING.

Mile dash. Purse, eighty dollars. First horse, fifty dollars; second horse, thirty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Red Light	Sam. Gowan, Jr.	Greenville
Nellie Banta	W. C. Cole	Greenville
Snuffbox	Joe Dyson	Sierraville
Rose Bollinger	D. D. Neuman	Sierraville

Position at Starting.	*Position at Close.*	
1. Nellie Banta	Nellie Banta	1
2. Rose Bollinger	Snuffbox	2
3. Red Light		
4. Snuffbox		

RACE NO. 12—RUNNING.

Quarter-mile dash. Purse, forty dollars. First horse, twenty-five dollars; second horse, ten dollars; third horse, five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Lillie Odett	Sam. Gowan, Jr.	Greenville
Barney	Howard Hall	Greenville
Rose Bollinger	Joe Dyson	Sierraville
Nellie G.	D. D. Munroe	Susanville
Summit	D. D. Neuman	Sierraville

Position at Starting.	*Position at Close.*	
1. Summit	Barney	1
2. Nellie G.	Nellie G.	2
3. Lillie Odett	Lillie Odett	3
4. Barney		

Rose Bollinger drawn.

Time—0:25½.

RACE NO. 13—TROTTING.

Double team trot. Mile and repeat. Trained horses barred. Purse, fifty dollars. First team, thirty-five dollars; second team, fifteen dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Gen. Lee and mate	R. H. Gray	Greenville
Gray Billy and mate	T. L. Barham	Greenville
Rock and mate	J. E. Pardee	Greenville

Position at Starting.	*Position at Close.*	
1. Gray Billy and mate	Gray Billy and mate	1
2. Gen. Lee and mate	Gen. Lee and mate	2

Rock and mate drawn.

Time—3:45.

FRIDAY, SEPTEMBER 22D, 1882.

RACE NO. 14—TROTTING.

Free for all. Three in five. Mile heats. Purse, two hundred and fifty dollars. First horse, one hundred and fifty dollars; second horse, seventy-five dollars; third horse, twenty-five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Bell Spencer	E. V. Spencer	Susanville
William Tell	C. H. Lawrence	Greenville
Carlisle	Charles Sherman	Chico

Position at Starting.	*Position at Close.*	
1. Bell Spencer	Carlisle	1
2. Carlisle	Bell Spencer	2

William Tell drawn.

Time—2:35.

RACE NO. 15—RUNNING.

Two-mile heats. Purse, two hundred dollars. First horse, one hundred and forty dollars; second horse, sixty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Red Light	Sam. Gowan, Jr.	Greenville
L. Clark	Joe Dyson	Sierraville
Overland Pat	D. D. Neuman	Sierraville

Position at Starting.	*Position at Close.*	
1. Red Light	Overland Pat	1
2. Overland Pat	Red Light	2
3. L. Clark		

MONDAY, OCTOBER 16TH, 1882.

RACE NO. 1—TROTTING.

Free for all. Three in five. Purse, five hundred dollars; entrance, ten per cent. First horse, four hundred dollars; second horse, one hundred dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Altamont, by Almont	J. Beach	Linkville, Or
Nellie, by Pfenniger's Mike	James Sutherland	Etna
Professor	George Stevens	Jacksonville, Or
Dexter	Misner Bros.	Portland, Or

Position at Starting.	*Position at Close.*			
1. Altamont	Altamont	1	1	1
2. Nellie	Nellie	2	2	2
3. Professor	Professor	dis.		

RACE NO. 2—RUNNING.

Dash of a mile and a half. Free for all horses owned in the district. Purse, one hundred dollars. Entrance, five dollars, added.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Hancock, by Glencoe	Jas. Muse	Fort Jones
H. C. Nelson, by Norfolk	S. Wilson	Hot Spring Val
Harry B., by Pillbox	Jas. Blain	Hot Spring Val
Brick Pomeroy	Geo. H. Rucker	Alturas
Ida Hammond	S. S. Ford	Alturas

Position at Starting.	*Position at Close.*	
1. Hancock	Hancock	1
2. H. C. Wilson	Harry B.	2
3. Harry B.	H. C. Wilson	3
4. Brick Pomeroy	Ida Hammond	4
5. Ida Hammond	Brick Pomeroy	5

TUESDAY, OCTOBER 17TH, 1882.

RACE NO. 3—TROTTING.

Free for all untried horses in the district. Best two in three. Purse, seventy-five dollars. Entrance, five dollars, added.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Favorite	Jay Beach	Linkville, Or
May D., by Pfenniger's Mike	J. Tierney	Jacksonville, Or
Curtis, by Abdallah Charlton	W. Eckhart	Yreka
Ned, by Abdallah Charlton	Ned O'Niel	Yreka

Position at Starting.	*Position at Close.*	
1. May D.	Curtis	1
2. Ned	Favorite	dis
3. Favorite	Ned	dis
4. Curtis	May D.	dis

Time—3:17½.

RACE NO. 4—RUNNING.

Half-mile and repeat. Free for all horses owned in the district. Purse, seventy-five dollars. Entrance, five dollars, added.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Up and Up, by Glencoe	Jas. Muse	Fort Jones
Harry B., by Pillbox	Jas. Blain	Hot Spring Val

Position at Close.

Up and Up 1

RACE NO. 5—TROTTING.

Free for all three-year-olds and under owned in the district. Purse, seventy-five dollars. Entrance, five dollars, added.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Zillophone, by Altamont	Jay Beach	Linkville, Or
Sleepy Kate, by Pfenniger's Mike	Jas. Sutherland	Etna

WEDNESDAY, OCTOBER 18TH, 1882.

RACE NO. 6—TROTTING.

Free for all horses owned in the district. Best three in five. Purse, one hundred dollars. Entrance, five dollars, added.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Maggie Arnold, by Altamont	Jay Beach	Linkville, Or
Nellie, by Pfenniger's Mike	Jas. Sutherland	Etna

RACE NO. 7—FOOT RACE.

Seventy-five yards and repeat. Purse, fifty dollars. Entrance, five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
John Sissill		Edgwood
M. S. Carrick		Yreka
Frank King		Edgwood

Position at Close.

John Sissill 1 1

Frank King 2 2

RACE NO. 8—RUNNING.

Free for all three-year-olds and under owned in the district. Dash of three fourths of a mile. Purse, seventy-five dollars; entrance, five dollars, added.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Fred, by Scamperdown	A. D. Richards	Yreka
Flying Gelding	Jas. Muse	Fort Jones
Jennie M.	S. Wilson	Hot Spring Val

Position at Starting.	Position at Close.	
1. Fred	Fred	1
2. Jennie M.	Jennie M.	2
3. Flying Gelding	Flying Gelding	3

Time—1:20½.

THURSDAY, OCTOBER 19TH, 1882.

RACE NO. 9—RUNNING.

Free for all. Two in three. Purse, three hundred dollars. Entrance, ten per cent. First horse, two hundred and fifty dollars; second horse, fifty dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Hancock, by Glencoe	Jas. Muse	Fort Jones
Harry B., by Pillbox	Jas. Blain	Hot Spring Val
Charlie	Jas. Edson	Gazelle
Fred, by Scamperdown	A. D. Richards	Yreka

Position at Starting.	Position at Close.			
1. Hancock	Harry B.	2	1	1
2. Harry B.	Hancock	1	2	2
3. Charlie	Charlie	dis.		

Time—1:50¼; 1:54½: 2:01.

RACE NO. 10—TROTTING.

Free for all horses in the district which have never beaten three minutes. Purse, one hundred dollars. Entrance, five dollars.

Name and Pedigree of Horse.	By Whom Entered.	P. O. Address.
Tyler, by Vermont	J. Tierney	Jacksonville, Or
Sorrel Dick	Jas. Sutherland	Etna

Position at Starting.	Position at Close.		
1. Tyler	Tyler	1	1
2. Sorrel Dick	Sorrel Dick	2	dis.

Time—3:16⅓; 2:58.

TRANSACTIONS

OF THE

ELEVENTH DISTRICT AGRICULTURAL ASSOCIATION

For the Year 1882,

Composed of the Counties of Plumas, Lassen, Sierra, and Modoc.

REPORT.

Quincy, December 1, 1882.

To the honorable the State Board of Agriculture:

Gentlemen: The Directors of the Eleventh District Agricultural Association submit this their report of the transactions of said Association, for the year ending this date.

W. D. FLETCHER, Secretary.

RECEIPTS AND EXPENDITURES.

Receipts.

By balance on hand from the year 1881	$717 00	
By receipts from sale of tickets	482 00	
By receipts for admission to track and pavilion	368 25	
By receipts from profits on Fair ball	98 00	
By receipts from entrance money	627 00	
By receipts from subscription	900 00	
By receipts from State appropriation	800 00	
By receipts from sale of pavilion privilege	10 00	
		$4,002 25

Expenditures.

To premiums paid on stock	$484 00	
To premiums paid on farm implements, etc.	598 00	
To cash paid for bills of expense audited	859 49	
To cash paid for premiums	1,730 00	
		3,671 49
By balance in favor of Association		$330 76

PREMIUMS AWARDED—1882.

FIRST DEPARTMENT.

LIVE STOCK.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
HORSES.				
Best thoroughbred horse	Joe Dyson	Sierraville	Snuffbox	$25 00
Best thoroughbred mare	D. D. Neuman	Sierraville	Rose Bollinger	$15 00
Best horse of all work	W. Spangle	Susanville	Yolo Dave	$25 00
Second best	L. Hough	Greenville	Mike	$10 00
Best mare of all work	N. B. Forgay	Greenville	Maggie	$15 00
Second best	L. F. Hough	Greenville	Bird	$10 00
Two-year-old	J. M. Cadle	Greenville	Dolly	$10 00
Two-year-old	Levi Hunt	Greenville		$10 00
American two-year-old	J. M. Cadle	Greenville	Mary	$10 00
American two-year-old	Jack Laurey	Greenville	Blackbird	$10 00
Best suckling colt	E. D. Hosselkus	Genesee P. O.	Dolly	$5 00
Second best	J. M. Cadle	Greenville	Maria	$2 50
Best brood mare and family	Geo. Hessing	Taylorsville	Rose and family	$15 00
Second best	E. D. Hosselkus	Genesee P. O.	Sallie and family	$10 00
Rochester stallion	C. H. Lawrence	Greenville	William Tell	$15 00
Rochester stallion	C. H. Lawrence	Greenville	Carlisle	$15 00
Best mare	H. M. Kingsbury	Quincy	Mollie Barnes	$15 00
Best draft horse	Bidwell & Watson	Greenville		$20 00
Best two-year-old	Geo. Hessing	Taylorsville	Fred	$10 00
Best carriage horse	R. A. Gray	Greenville	General and mate	$15 00
Best colt	W. L. Peters	Taylorsville		$10 00
Second best	A. R. Bidwell	Greenville	Blackbird and mate	$5 00
Best draft team	E. D. Hosselkus	Genesee P. O.	Rose and Mattie	$15 00
CATTLE.				
Best thoroughbred bull	Isaac Hall	Greenville	Sierra	$20 00
Second best	W. T. Peters	Taylorsville	Hayes	$10 00
Best bull, two-year-old	R. Thompson	Taylorsville	Garfield	$15 00
Second best	N. B. Forgay	Greenville	Butler Bill	$10 00

First Department—Continued.

Live Stock.	Name of Owner.	P. O. Address.	Name of Animal.	Award.
Best bull, one-year-old	Perry Bros.	Greenville	Washington	$10 00
Second best	Isaac Hall	Greenville	Patrick	$5 00
Best cow	Isaac Hall	Greenville	Miss Banta	$15 00
Second best	R. S. Flournoy	Taylorsville	Thorndale Rose	$10 00
Best cow, two-year-old	R. S. Flournoy	Taylorsville	Vista	$10 00
Best cow, one-year-old	R. S. Flournoy	Taylorsville	Snowflake	$10 00
Best graded bull	L. F. Hough	Greenville	Dick	$15 00
Best graded cow	L. F. Hough	Greenville	Rose	$10 00
Best two-year-old	L. F. Hough	Greenville	Mary	$5 00
Best one-year-old	L. F. Hough	Greenville	Sarah	$3 00
SHEEP.				
Best ram	N. B. Forgay	Greenville		$10 00
Best ewe	N. B. Forgay	Greenville		$10 00
Best pen of sheep	N. B. Forgay	Greenville		$10 00
POULTRY.				
Best ducks	C. H. Lawrence	Greenville		$2 50
SWINE.				
Best Berkshire boar	C. H. Lawrence	Greenville		$5 00
Best Berkshire sow	C. H. Lawrence	Greenville		$5 00
Best Chester white boar	L. Hunt	Greenville		$5 00
Best Poland sow	N. B. Forgay	Greenville		$5 00
Best pen of pigs	N. B. Forgay	Greenville		$2 50

SECOND DEPARTMENT.

HOUSEHOLD FABRICS.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. Wright	Greenville	Display of millinery	$10 00
Miss J. Hardgrave	Taylorsville	Scarf	$2 00
Mrs. A. E. Savercool	Taylorsville	Scarf	$1 00
Mrs. A. E. Savercool	Prattville	Quilt	$5 00
Mrs. P. H. Boland	Greenville	Lady's dress	$3 00
Mrs. A. Picken	Greenville	Lady's dress	$5 00
Mrs. G. W. Perry	Greenville	Pair woolen mittens	$1 00
Mrs. F. Cope	Greenville	Three quilts	$2 50
Mrs. W. E. Ward	Quincy	Crochet shawl	$2 00
Miss Susie Bransford	Greenville	Lady's dress	$10 00
Mrs. Wm. Munson	Greenville	Crochet shawl	$2 00
Mrs. Dempster	Quincy	Lace tidy	$2 00
Mrs. Dempster	Quincy	Common tidy	$1 00
Mrs. Dempster	Quincy	Beaded slippers	$1 50
Mrs. Dempster	Quincy	Hand-made shirts	$2 50
Mrs. Dempster	Quincy	Lace curtains	$5 00
Mrs. Dempster	Quincy	Two embroidered skirts	$2 00
Mrs. R. A. Gray	Greenville	Embroidered slippers	$1 50
Mrs. R. A. Gray	Greenville	Smoking jacket	$1 50
Mrs. W. P. Bush	Greenville	Display of lace	$5 00
Mrs. W. P. Bush	Greenville	Java canvas tidy	$2 00
Mrs. Atherton	Greenville	Beaded watch chain	$1 00
Mrs. A. E. Savercool	Prattville	Lady's night dress	$1 00
Mrs. H. Cohn	Quincy	Kensington scarf	$2 50
Mrs. H. Cohn	Quincy	Embroidered camp stool	$2 50
Mrs. L. Fredrick	Quincy	Crochet cotton tidy	$2 00
Miss Ella Penman	Greenville	Worsted flowerwork	$2 00
Miss Ella Penman	Greenville	Hand-knit necktie	$1 00
Mrs. W. D. Fletcher	Greenville	Hand-stitched kerchief	$2 00
Mrs. M. A. Perry	Greenville	Worsted tidy	$2 00
Mrs. M. C. Tabor	Greenville	Chemise embroidery	$2 50
Mrs. Morris Smith	Greenville	Agricultural wreath	$3 00
Mrs. Morris Smith	Greenville	Tarleton bouquet	$2 00
Mrs. T. D. Fraser	Greenville	Baby's blanket	$1 00
Mrs. T. D. Fraser	Greenville	Wide knit lace	$1 00
Mrs. E. Benner	Prattville	Knit bedspread	$3 00
Mrs. E. Benner	Prattville	Tidy	$1 00
Miss Emma Penman	Greenville	Paper picture frame	$3 00
Miss May Thompson	Quincy	Crochet tidy	$1 00
Mrs. H. T. Firmstone	Greenville	Sample hemstitching	$1 50
Mrs. H. T. Firmstone	Greenville	Toilet cushion	$1 00
Mrs. W. W. Kellogg	Quincy	Canvas tidy, four pieces	$3 00
Miss Maggie Kennedy	Greenville	Tedded mat	$2 00
Miss Lizzie Kennedy	Greenville	Card work with silk	$2 00
Miss Lizzie Kennedy	Greenville	Crochet machine cover	$2 50
Miss Lizzie Kennedy	Greenville	Underwear crochet	$1 00
Miss Lizzie Short	Greenville	Knit wool jacket	$2 50
Miss Jennie Chapman	Greenville	Pillow shams	$1 00
Mrs. J. D. Compton	Greenville	Worsted toilet set	$3 00
Miss Amy Lee	Greenville	Cardboard work	$1 00
Mrs. George Proctor	Greenville	Embroidery on velvet	$5 00
Mrs. H. T. Firmstone	Greenville	Display of tatting	$2 00
Mrs. G. G. Clough	Quincy	Sofa cushion	$3 00
Mrs. G. G. Clough	Quincy	Pincushion	$1 00
Mrs. G. G. Clough	Quincy	Bed shams, four pieces	$3 00
Mrs. G. G. Clough	Quincy	Towel shams	$1 00
Mrs. J. A. Ketchum	Quincy	Child's braided shawl	$2 00
Mrs. J. S. Bramford	Greenville	Two tidies	$1 00
Mrs. Annie Marshall	Greenville	Table mat	$1 00
Mrs. H. T. Firmstone	Greenville	Rag carpet	$5 00
Mrs. J. Kennedy	Greenville	Rag carpet	$3 00
Mrs. Annie Ward	Susanville	Drawn rug	$3 00

THIRD DEPARTMENT.

FOR GIRLS UNDER SIXTEEN.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Miss Lizzie Forgay	Greenville	Butter	$2 50
Miss Susie Lee	Greenville	Cotton shirt	$1 50
Miss Etta Lee	Greenville	Fancy apron	$1 50
Miss Etta Lee	Greenville	Fancy skirt	$1 50
Miss Anna Pekin	Greenville	Cardboard work	$1 00
Miss Anna Pekin	Greenville	Tidy	$1 00
Miss Mamie Burge	Taylorsville	Tarleton wreath	$1 00
Miss Mary Hall	Greenville	Child's dress	$2 00
Christina Knoll	Greenville	Display of hair work	$1 00
Miss May Kennedy	Greenville	Crochet lace	$1 00
Miss May Kennedy	Greenville	Cardboard and worsted	$1 00
Miss L. Short	Greenville	Point lace	$1 00
Miss Anna Hogan	Quincy	Agricultural wreath	$1 00
Miss Atherton	Greenville	Hair switch	$2 00
Miss Atherton	Greenville	Hair work	$1 00
Miss Maggie Kennedy	Greenville	Hair switch	$1 00
Miss Jessie Chapman	Greenville	Hair work	$2 00

FOURTH DEPARTMENT.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
PRESERVES AND JELLIES.			
Mrs. J. W. Thompson	Quincy	White currant jelly	$2 00
Mrs. J. W. Thompson	Quincy	Red currant jelly	$1 00
Mrs. J. W. Thompson	Quincy	Black currant jelly	$2 00
Mrs. J. W. Thompson	Quincy	Apple jelly	$2 00
Mrs. J. W. Thompson	Quincy	Grape jelly	$2 00
Mrs. J. W. Thompson	Quincy	Gooseberry jelly	$2 00
Mrs. J. W. Thompson	Quincy	Strawberry preserves	$2 00
Mrs. J. W. Thompson	Quincy	Raspberry jam	$2 00
Mrs. J. W. Thompson	Quincy	Raspberry jam	$1 00
Mrs. J. W. Thompson	Quincy	Wild cherry jam	$2 00
Mrs. J. W. Thompson	Quincy	Dried apples	$2 00
Mrs. J. W. Thompson	Quincy	Dried plums	$2 00
Mrs. J. W. Thompson	Quiney	Dried green corn	$2 00
Mrs. J. W. Thompson	Quincy	Cucumber catsup	$2 00
Mrs. J. W. Thompson	Quincy	Gooseberry catsup	$1 00
Mrs. J. W. Thompson	Quincy	Raspberry jelly	$2 00
Mrs. J. W. Thompson	Quincy	Black raspberry jelly	$2 00
Mrs. J. W. Thompson	Quincy	Assorted pickles	$2 00
Mrs. J. W. Thompson	Quincy	One jar layer jelly	$2 00
A. H. Hickerson	Greenville	Dried apples	$1 00
A. H. Hickerson	Greenville	Honey	$2 50
Mrs. L. E. Lee	Greenville	Sweet pickles	$2 00
Mrs. L. E. Lee	Greenville	Mixed pickles	$1 00
Mrs. L. E. Lee	Greenville	Gooseberry catsup	$2 00
Mrs. L. E. Lee	Greenville	Currant catsup	$2 00
Mrs. L. E. Lee	Greenville	Gooseberry jam	$2 00
Mrs. L. E. Lee	Greenville	Sweet apple preserves	$2 00
Mrs. L. E. Lee	Greenville	Prune preserves	$2 00
Mrs. L. E. Lee	Greenville	Currant preserves	$2 00
Mrs. L. E. Lee	Greenville	Gooseberry preserves	$2 00

FOURTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
Mrs. L. E. Lee	Greenville	Grape preserves	$2 00
Mrs. L. E. Lee	Greenville	Pear preserves	$2 00
Mrs. R. Thompson	Taylorsville	Display of fruit in jars	$4 00
Mrs. R. Thompson	Taylorsville	Raspberry preserves	$2 00
Mrs. R. Thompson	Taylorsville	Blackberry preserves	$2 00
Mrs. R. Thompson	Taylorsville	Gooseberry preserves	$2 00
Mrs. G. W. Perry	Greenville	Raspberry jam	$1 00
Mamie Burge	Taylorsville	White currant jelly	$1 00
Mamie Burge	Taylorsville	Red currant jelly	$2 00
Mamie Burge	Taylorsville	Crabapple jelly	$2 00
Mamie Burge	Taylorsville	Apple jelly	$1 00
Mamie Burge	Taylorsville	Raspberry jelly	$1 00
Mamie Burge	Taylorsville	Black raspberry jelly	$1 00
Mamie Burge	Taylorsville	Wild cherry jelly	$1 00
Mamie Burge	Taylorsville	Gooseberry jelly	$1 00
Mamie Burge	Taylorsville	Pear jelly	$2 09
Mamie Burge	Taylorsville	Quince jelly	$2 00
FLOWERS.			
Mrs. J. W. Thompson	Quincy	Ten bouquets	$2 00
Mrs. J. W. Thompson	Quincy	Exhibit cut flowers	$1 00
Mrs. J. W. Thompson	Quincy	Floral design	$2 50
Mrs. J. W. Thompson	Quincy	Ten varieties of fuchsias	$2 50
Mrs. C. A. Martin	Greenville	Everlasting flowers	$1 00
Mrs. Proctor	Greenville	Collection of house plants	$1 50
Mrs. W. D. Fletcher	Greenville	Collection of house plants	$2 50
FRUIT.			
Morris Smith	Quincy	Box of plums	$5 00
A. J. Hickerson	Greenville	Six varieties of apples	$10 00
Matt. Knoll	Greenville	Bartlett pears	$5 00
J. P. Burge	Taylorsville	Peaches	$5 00
VEGETABLES.			
A. J. Hickerson	Greenville	Cabbage	$2 00
A. J. Hickerson	Greenville	Squash	$2 00
A. J. Hickerson	Greenville	Hops (special)	$1 00
Michael Branley	Greenville	Brownwell potatoes	$2 00
Michael Branley	Greenville	Flat Dutch cabbage	$2 00
J. W. Thompson	Quincy	Celery	$2 00
Isaac Hall	Greenville	Rutabagas	$2 00
R. S. Flournoy	Taylorsville	Early Rose potatoes	$3 00
R. S. Flournoy	Taylorsville	Early Ohio potatoes	$3 00
R. S. Flournoy	Taylorsville	Squash	$1 00
R. S. Flournoy	Taylorsville	Onions	$1 00
R. S. Flournoy	Taylorsville	Carrots	$2 00
Wm. Foreman	Taylorsville	Swedish potatoes	$1 50
G. W. Boyden	Taylorsville	Squash	$1 00
E. D. Hosselkus	Genesee	Onions	$2 00
E. D. Hosselkus	Genesee	Assortment peas	$2 00
E. D. Hosselkus	Genesee	Red cabbage	$2 00
E. D. Hosselkus	Genesee	Beets	$2 00
E. D. Hosselkus	Genesee	Turnips	$2 00
J. M. Cadle	Greenville	Blood red beets	$1 00
R. Martin	Shoo Fly	Tomatoes	$2 00
SEED, GRAIN, AND FLOUR.			
A. J. Hickerson	Greenville	Seed wheat	$5 00
J. H. Smith	Greenville	Oats in head	$1 00
J. H. Smith	Greenville	Sack of oats	$2 50
J. M. Cadle	Greenville	Timothy seed	$5 00
J. M. Cadle	Greenville	Seed barley	$2 50
R. S. Flournoy	Genesee	Seed wheat	$10 00
R. S. Flournoy	Genesee	Seed oats	$5 00
R. S. Flournoy	Genesee	Three varieties corn	$5 00
Wm. Foreman	Taylorsville	One sack rye	$5 00
A. J. Hickerson	Greenville	One sack timothy seed	$2 50

FOURTH DEPARTMENT—Continued.

Exhibitor.	P. O. Address.	Article Exhibited.	Award.
A. J. Hickerson	Greenville	Wheat in head	$1 00
J. W. Thompson	Greenville	One sack flour	$5 00
BUTTER.			
Wm. Foreman	Taylorsville	Roll butter	$2 50
Isaac Hall	Greenville	Keg butter	$2 50
J. H. Hickerson	Greenville	Roll butter	$2 50
E. D. Hosselkus	Genesee	Keg butter	$7 50
VEHICLES.			
K. McLeod	Greenville	Two-seated carriage	$15 00
K. McLeod	Greenville	One-seated buggy	$10 00
K. McLeod	Greenville	Family cutter	$10 00
MACHINERY.			
Bidwell & Watson	Greenville	Foundry patterns	$10 00
T. T. Emmons	Greenville	Farm gate	$5 00
PRINTING.			
I. H. Mulholland	Greenville	Job printing	$10 00
W. E. Ward	Quincy	Job printing	$5 00
LEATHER MANUFACTURE.			
A. Pekin	Greenville	One pair fine boots	$5 00
A. Pekin	Greenville	One pair heavy boots	$5 00
T. Fortner	Greenville	One set buggy harness	$10 00
T. Fortner	Greenville	One set heavy harness	$10 00
T. Fortner	Greenville	One man's saddle	$5 00
T. Fortner	Greenville	One lady's saddle	$5 00
SOAP.			
A. J. Chapman	Greenville	Laundry soap	$2 00
A. J. Chapman	Greenville	Toilet soap	$2 00
A. J. Chapman	Greenville	Aroma soap	$2 00
COOPERAGE.			
C. H. Lawrence	Greenville	Assorted moldings	$5 00
C. H. Lawrence	Greenville	Shaved shingles	$2 50
Victor Bull	Greenville	Shaved shingles	$1 50
Victor Bull	Greenville	Butter firkins	$2 50
Victor Bull	Greenville	Beef barrel	$1 00
Victor Bull	Greenville	Shakes	$2 50
MISCELLANEOUS.			
McBeth & Compton	Greenville	Display of hardware	$15 00
T. Harland	Greenville	Fossils and minerals	$15 00
F. W. Veterline	Quincy	Brighton range	$10 00
J. C. Patch	Greenville	Bedroom set	$10 00
John Kitchen	Greenville	Churn and wood turning	$5 00
W. D. Fletcher	Greenville	Home-made jewelry	$5 00
Mrs. W. A. Perry	Greenville	Fruit cake	$3 00
J. M. Cadle	Greenville	Posthole digger	$2 00

ERRATA.

STATE FAIR RACES.

Race No. 17 should read: First horse, two hundred dollars; second horse, one hundred dollars; entrance, 5 per cent., to third horse.

Race No. 20 should read: First horse, three hundred dollars, instead of thirty dollars.

STATE VITICULTURAL COMMISSION.

SECOND ANNUAL REPORT

OF THE BOARD OF

STATE VITICULTURAL COMMISSIONERS.

SACRAMENTO;
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

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OFFICERS AND MEMBERS

OF THE

BOARD OF STATE VITICULTURAL COMMISSIONERS.

ARPAD HARASZTHY, President,
Commissioner for the San Francisco District.

CHARLES A. WETMORE, Vice-President,
Commissioner for the State at Large.

CHARLES KRUG, Treasurer,
Commissioner for the Napa District.

I. DeTurk	Commissioner for the Sonoma District.
R. B. Blowers	Commissioner for the Sacramento District.
George West	Commissioner for the San Joaquin District.
L. J. Rose	Commissioner for the Los Angeles District.
G. G. Blanchard	Commissioner for the El Dorado District.
J. DeBarth Shorb	Commissioner for the State at Large.

JOHN H. WHEELER, Secretary.

CHARLES A. WETMORE,
Chief Executive Viticultural and Health Officer.

STANDING COMMITTEES.

Executive	Charles A. Wetmore, George West, and I. DeTurk.
Auditing	R. B. Blowers.
Finance	L. J. Rose and J. DeBarth Shorb.

Phylloxera, Vine Pests, and Diseases of the Vine:
I. DeTurk, George West, Charles Krug, R. B. Blowers, and Charles A. Wetmore.

On Conference with Board of Regents of State University:
Arpad Haraszthy, Charles A. Wetmore, and Charles Krug.

On Instructions for the Office of the Chief Executive Viticultural Officer:
Arpad Haraszthy, Charles Krug, and I. DeTurk.

On Horticulture:
George West, R. B. Blowers, and J. DeBarth Shorb.

On Distillation, Counterfeits, and Adulterations:
J. DeBarth Shorb, Charles Krug, and George West.

Offices of the Board:
No. 111 Leidesdorff Street, San Francisco.

OFFICERS AND MEMBERS

OF THE

STATE BOARD OF HORTICULTURAL COMMISSIONERS.

CHARLES H. DWINELLE, President,
Commissioner for the State at Large.

W. W. Smith	Commissioner for the Napa District.
M. T. Brewer	Commissioner for the Sacramento District.
W. B. West	Commissioner for the San Joaquin District.
Felix Gillet	Commissioner for the El Dorado District.
Albert S. White	Commissioner for the Los Angeles District.
S. F. Chapin	Commissioner for the San Francisco District.
A. Cadwell	Commissioner for the Sonoma District.
Matthew Cooke	Commissioner for the State at Large.
Charles H. Shinn	Commissioner for the State at Large.
Ellwood Cooper	Commissioner for the State at Large.

JOHN H. WHEELER, Secretary.

MATTHEW COOKE,
Chief Executive Horticultural and Health Officer.

STANDING COMMITTEES

ON THE OCCURRENCES AND RAVAGES OF AND REMEDIES AGAINST INSECT PESTS:

On Citrus Trees	Albert S. White.
On Olive Trees	Ellwood Cooper.
On Deciduous and Ornamental Trees	S. F. Chapin.
On Codlin Moth	Matthew Cooke and Felix Gillet.
On Red Spider, Mites, etc.	W. B. West.
On Fruit Packages	W. W. Smith and W. B. West.
On Transportation and Quarantine	Chas. H. Shinn and Matthew Cooke.
On Rules and Regulations	Charles H. Dwinelle.
On Conference with Shippers and Commission Merchants	M. T. Brewer.
On Borers Injurious to Fruit and Fruit Trees	Felix Gillet.

Offices of the Board:
No. 111 Leidesdorff Street, San Francisco.

ACTS OF THE LEGISLATURE.

CHAPTER LXII.

An Act for the Promotion of the Viticultural Industries of the State.

[Approved April 15, 1880.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. There shall be appointed by the Governor a Board of State Viticultural Commissioners, to consist of nine members, two to be appointed from the State at large, and one to be appointed from each of the seven viticultural districts, which shall be constituted as follows:

First—The Sonoma District, which shall include the Counties of Sonoma, Marin, Lake, Mendocino, Humboldt, Del Norte, Trinity, and Siskiyou.

Second—The Napa District, which shall include the Counties of Napa, Solano, and Contra Costa.

Third—The San Francisco District, which shall include the City and County of San Francisco, and the Counties of San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey.

Fourth—The Los Angeles District, which shall include the Counties of Los Angeles, Ventura, Santa Barbara, San Luis Obispo, San Bernardino, and San Diego.

Fifth—The Sacramento District, which shall include the Counties of Sacramento, Yolo, Sutter, Colusa, Butte, Tehama, and Shasta.

Sixth—The San Joaquin District, which shall include the Counties of San Joaquin, Stanislaus, Merced, Fresno, Tulare, and Kern.

Seventh—The El Dorado District, which shall include the Counties of El Dorado, Amador, Calaveras, Tuolumne, Mariposa, Placer, Nevada, Yuba, Sierra, Plumas, Lassen, Modoc, Alpine, Mono, and Inyo.

SEC. 2. The Commissioners, excepting the two appointed from the State at large, shall be residents of the districts from which they are appointed, and shall be specially qualified by practical experience and study in connection with the industries dependent upon the culture of the grapevine in this State. They shall each hold office for the term of four years, excepting that, of the nine first appointed, four, to be determined by lot, shall retire at the end of two years, when their successors shall be appointed by the Governor.

SEC. 3. The Board shall elect from among their own number a President, a Vice-President, and a Treasurer, and they shall appoint a Secretary, who shall not be one of their number, and whose salary shall not exceed one hundred dollars per month. And the Board shall determine and fix the amount of bonds that shall be given by the Treasurer and Secretary for the faithful performance of their duties.

SEC. 4. It shall be the duty of the Board to meet semi-annually to consult and to adopt such measures as may best promote the progress of the viticultural industries of the State. It shall be their duty to select and appoint competent and qualified persons to deliver at least one lecture each year in each of the viticultural districts named in section one of this Act, for the purpose of illustrating practical viticultural topics, and imparting instruction in methods of culture, pruning, fertilizing, fermenting, distilling, and rectifying, treating diseases of the vine, raisin drying, etc., for the better instruction of the people interested therein, as the requirements of each district may show to be necessary and important, and to disseminate all such useful knowledge relating to viticulture, by printed documents or correspondence, as may be within their power to do. The Board shall devote especial attention to the study of the phylloxera and other diseases of the vine, and shall make such recommendations in their semi-annual reports as they may deem best for the protection of vineyards.

SEC. 5. The Commissioners constituting the Board shall serve without compensation, and shall be allowed only their actual transportation expenses to and from their places of residence when attending the semi-annual meetings of the Board.

SEC. 6. The office of the Board shall be in the City of San Francisco, and shall be kept open to the public, subject to the rules of the Board, every day, excepting legal holidays, and shall be in charge of the Secretary during the absence of the Board.

SEC. 7. It shall be the duty of the Secretary to attend all regular meetings of the Board, and to preserve records of proceedings and correspondence; to collect books, pamphlets, periodicals, and other documents containing valuable information relating to viticulture, and to preserve the same; to collect statistics, and other information, showing the actual condition and progress of viticulture in this State, and elsewhere; to collect information concerning lands suitable for viticulture, and to impart to the public, upon proper demands being made, information concerning the localities of such lands, prices, cost of cultivation, and means of transportation; *provided*, that he shall receive no fees for such services; to correspond with agricultural and viticultural societies, colleges, and schools of agriculture, and other persons and bodies, political or private, and disseminate information, printed or otherwise, as he may be directed by the Board of Commissioners; and to prepare, as required by the Board, semi-annual reports for publication.

SEC. 8. And for the further promotion of viticultural interests, it shall be the duty of the Board of Regents of the University of California to provide special instruction to be given by the Agricultural Department of the University in the arts and sciences pertaining to viticulture, the theory and practice of fomentation, distillation, and rectification, and the management of cellars, to be illustrated by practical experiments with appropriate apparatus; also, to direct the Professor of Agriculture, or his assistant, to make personal examinations and reports upon the different sections of the State adapted to viticulture; to examine and report upon the woods of the State procurable for cooperage, and the best methods of treating the same; and to make analyses of soils, wines, brandies, and grapes, at the proper request of citizens of the State; also, to prepare a comprehensive analysis of the various wines and spirits produced from grapes, showing their alcoholic strength and other properties, and especially any deleterious adulterations that may be discovered. The Regents shall also cause to be prepared, printed, and distributed to the public, quarterly reports of the Professor in charge of this work, relating to experiments undertaken, scientific discoveries, the progress and treatment of the phylloxera, and other diseases of the vine, and such other useful information as may be given for the better instruction of viticulturists.

SEC. 9. The Board of Regents of the University shall be authorized to receive and accept donations of lands suitable for experimental vineyards and stations, and shall submit in their next annual report an economical plan for conducting such vineyards, and for the propagation and distribution of specimens of all known and valuable varieties of grapevines.

SEC. 10. There is hereby appropropriated, for the purposes mentioned in the Act, the sum of seven thousand dollars, to be apportioned as follows: For the necessary and contingent expenses of the Board of State Viticultural Commissioners, four thousand dollars, and for the University of California, three thousand dollars; and the State Controllor shall draw his warrants upon the State Treasurer in favor of the Treasurers of the said Board of State Viticultural Commissioners, and of the University of California, for the amounts of four thousand and three thousand dollars respectively, as hereby appropriated, upon proper demand being made for the same; *provided*, that the said Board of State Viticultural Commissioners shall, in the month of December, submit to the Governor annual statements, duly verified by the oaths of the President and Treasurer, and attested by the Secretary of said Board, showing in detail the manner in which moneys received from the State have been expended, and also the amount remaining unexpended, together with an estimate of expenses for the ensuing year, beginning on the first day of July next thereafter.

SEC. 11. This Act shall take effect and be in force from and after its passage.

CHAPTER LI.

An Act to define and enlarge the duties and powers of the Board of State Viticultural Commissioners, and to authorize the appointment of certain officers, and to protect the interests of horticulture and viticulture.

[Approved March 4th, 1881.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The Board of State Viticultural Commissioners, in addition to the duties and powers provided for by the Act entitled "An Act for the promotion of viticultural industries of the State," approved April fifteenth, eighteen hundred and eighty, shall, in respect to diseases of grapevines and vine pests, constitute a Board of Health. It shall, in addition to laboratory work, cause practical experiments to be made to determine or demonstrate the utility of known and new remedies against such diseases and pests.

SEC. 2. The Board shall elect of their own number, or appoint from without their number, a competent person to serve as Chief Executive Viticultural Officer, who shall perform also the duties of Viticultural Health Officer, under direction of said Board, and subject to removal from such office at any time by the Board.

SEC. 3. The Viticultural Health Officer shall have power, subject to the approval of the Board, to prevent the spread of vine diseases and vine pests, by declaring and enforcing rules and regulations in the nature of quarantine, to govern the manner of, restrain, or prohibit the importation into the State, and the distribution and disposal within the State, of all vines, vine cuttings, debris of vineyards, empty fruit boxes, or other material on or by which the contagion of vine diseases and germs of vine pests may be introduced into the State, or transported from place to place within the State; to declare and enforce regulations approved by the Board for the disinfection of vines, vine cuttings, vineyard debris, empty fruit boxes, and other suspected material dangerous to vineyards, while in transit, or about to be distributed, or transported into or within the State; to classify the vineyards and viticultural regions of the State, according to the degree of health or vine disease prevailing therein, and to change the same as circumstances may require to be done, subjecting each class to such varying rules and regulations, respecting the introduction or transportation of vines, vine cuttings, and other material liable to spread contagion of disease among vines, as may, in the opinion of the Board, become necessary and expedient for the preservation of vineyards. Such rules and regulations shall be circulated in printed form by the Board among the vine growers and fruit dealers of the State, shall be published at least thirty days in two daily newspapers of general circulation in the State, not of the same city or county, and shall be posted in a conspicuous place at the county seat of each county affected by their provisions.

Sec. 4. The Viticultural Health Officer may appoint local resident Inspectors in any and all of the viticultural regions of the State, whose duties shall be to report to him concerning the health of grapevines, the progress of vine diseases and pests, and all violations of the rules and regulations of the Board; to certify to the proper disinfection of vines, vine cuttings, empty fruit boxes, and other transportable articles required by the Board to be disinfected before transportation, or while in transit, or after delivery at any point of destination, the methods of disinfection to be determined and approved by the Health Officer and the Board; to seize upon and destroy all vines, vine cuttings, debris of vineyards, empty fruit boxes, and other material liable to spread contagion, which may be found in transit, or delivered after transportation, not certified to as required by the Board; *provided*, that the same may be exempt from such destruction if the cost of disinfection by such Inspector shall be provided for by the owner or agent in charge thereof, as may be prescribed for such cases of negligence, carelessness, or violation of quarantine rules, and to keep a record of all proceedings as such Inspectors; *provided*, that there shall be no compensation for such services of inspection, excepting a fee, not to exceed one dollar for each certificate of disinfection, in case of compliance with quarantine regulations, and not to exceed five dollars for each certificate of disinfection after seizure for non-compliance; *provided, however*, such inspectors may be employed at the option of the owners of property requiring disinfection to disinfect the same. All vines, or other articles absolutely prohibited of importation or transportation, may be promptly destroyed by any Inspector discovering the same transported or in transit, in violation of regulations, and the cost of such seizure, together with a fee of ten dollars, shall be paid to such Inspector out of any fine that may be collected from the party or parties guilty of such violation. Willful violation of the quarantine regulations of the Board shall be considered a misdemeanor, and punishable by a fine of not less than twenty-five nor more than one hundred dollars. Whenever required for the convenience of vine or fruit growers, or fruit dealers, a resident Inspector shall be appointed upon petition of any three neighboring vine or fruit growers, or dealers in grapes, to reside in their vicinity, if not already provided for; and there shall be not less than two Inspectors appointed for each county which is subjected to such quarantine regulations, and they shall each be subject to removal at the will of the Viticultural Health Officer, if incompetent, or they fail to perform their duties, or are unreasonably distasteful to vine growers and grape dealers.

Sec. 5. It shall be also the duty of the Chief Executive Viticultural Officer to personally visit, examine, and report upon the several viticultural regions of the State; to prepare documents for publication, as required by the Board, relating to any and all branches of viticultural industry, including treatises for the instruction of the public; to supervise the preparation of reports for publication, and especially report upon the practicability and means of eradicating diseases from vineyards, and to superintend experiments with known and new remedies.

Sec. 6. All printing heretofore ordered by the Board shall be paid for out of the appropriations heretofore made for its use. All printing required hereafter shall be done by the State Printer.

Sec. 7. The salary of the Chief Executive Viticultural Officer shall be fixed by the Board, not to exceed one hundred and fifty dollars per month, for services while engaged as such officer, and his actual traveling expenses shall be allowed, not to exceed five hundred dollars per annum.

Sec. 8. The Board of State Viticultural Commissioners shall also appoint an officer, who shall be especially qualified by practical experience in horticulture for the duties of his office, to perform similar duties respecting the protection of fruit and fruit trees as are provided for in this Act in reference to grapevines, with like powers; and the salary and traveling expenses of such officer shall be fixed by the said Board at the same amounts provided for in the case of the Chief Executive Viticultural Officer; and the said Board shall have power to establish such quarantine rules and regulations as are required for the protection of fruit and fruit trees from the spread of insect pests.

Sec. 9. There is hereby appropriated for the uses of the Board of State Viticultural Commissioners, as set forth in this Act, and in the Act providing for its organization, out of any moneys in the State treasury not otherwise appropriated, the sum of ten thousand dollars for the year commending July first, eighteen hundred and eighty-one, and ten thousand dollars for the year commencing July first, eighteen hundred and eighty-two; and the State Controller will draw his warrants upon the State Treasurer in favor of the Treasurer of the said Board for the said sums, or any part thereof, when they become available, upon proper demand being made for the same by said Board; *provided*, that no claim shall be paid out of said appropriation until the same shall have been presented to and approved by the State Board of Examiners.

Sec. 10. This Act shall take effect and be in force from and after its passage.

CHAPTER LXXV.

An Act to Protect and Promote the Horticultural Interests of the State.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. Whenever a petition is presented to the Board of Supervisors of any county, and signed by five or more persons who are resident freeholders and possessors of an orchard, or both, stating that certain or all orchards, or nurseries, or trees of any variety, are infected with scale bug, codlin moth, or other insects that are destructive to trees, and praying that a commission be appointed by them, whose duty it shall be to supervise their destruction, as hereinafter provided, the Board of Supervisors shall, within twenty days thereafter, select three Commissioners for the county, to be known as a County Board of Horticultural Commissioners. The Board of Supervisors may fill any vacancy that may occur in said Commission by death, resignation, or otherwise, and appoint one Commissioner each year, one month or thereabouts previous to the expiration of the term of office of any member of said Commission. The said Commissioners shall serve for a period of three years from the date of their appointment, except the Commissioners first appointed, one of whom shall serve for one year, one of whom shall serve for two years, and one of whom shall serve for three years, from the date of appointment. The Commissioners first appointed shall themselves decide, by lot or otherwise, who shall serve for one year, who two years, and who three years, and shall notify the Board of Supervisors of the result of their choice.

SEC. 2. It shall be the duty of the County Board of Horticultural Commissioners in each county, whenever they shall be informed by complaint of any person residing in such county, that an orchard, or nursery, or trees, or any fruit packing house, storeroom, saleroom, or any other place in their jurisdiction, is infested with scale bug, codlin moth, red spider, or other noxious insects liable to spread contagion dangerous to the trees or fruit of complainant, or their eggs or larvæ, injurious to fruit or fruit trees, they shall cause an inspection to be made of the said premises, and if found infected they shall notify the owner or owners, or the person or persons in charge or possession of the said trees, or places, as aforesaid, that the same are infested with said insects, or any of them, or their eggs or larvæ, and shall require such person or persons to disinfect the same within a certain time to be specified. If, within such specified time, such disinfection has not been accomplished, the said person or persons shall be required to make application of such treatment for the purpose of destroying them as said Commissioners shall prescribe. Said notices may be served upon the person or persons owning or having charge or possession of such infested trees, or places, or articles as aforesaid, by any Commissioner, or by any person deputed by the said Commissioners for that purpose, or they may be served in the same manner as a summons in a civil action. If the owner or owners, or the person or persons in charge or possession of any orchard, or nursery, or trees, or places, or articles, infested with said insects, or any of them, or their larvæ or eggs, after having been notified as above to make application of treatment as directed, shall fail, neglect, or refuse so to do, he or they shall be deemed guilty of maintaining a public nuisance, and any such orchards, nurseries, trees, or places, or articles thus infested, shall be adjudged and the same is hereby declared a public nuisance, and may be proceeded against as such. If found guilty, the Court shall direct the aforesaid County Board of Horticultural Commissioners to abate the nuisance. The expenses thus incurred shall be a lien upon the real property of the defendant.

SEC. 3. Said County Board of Horticultural Commissioners shall have power to divide the county into districts, and to appoint a local Inspector for each of said districts. The duties of such local Inspectors shall be prescribed by said County Board.

SEC. 4. It shall be the duty of said County Board of Commissioners to keep a record of their official doings, and to make a report to the Board of State Viticultural Commissioners on or before the first day of November of each year, who shall incorporate the same in their annual reports.

SEC. 5. It shall be the duty of the Commissioners at large, appointed by the Board of State Viticultural Commissioners for such purpose, to recommend, consult, and act with the County Board of Commissioners in their respective counties as to the most efficacious treatment to be adopted for the extermination of the aforesaid insects, or larvæ, or eggs thereof, and to attend to such other duties as may be necessary to accomplish or carry out the full intent and meaning of this Act.

SEC. 6. Each County Commissioner and local Inspector may be paid five dollars for each day actually engaged in the performance of his duties under this Act, payable out of the county treasury of his county; *provided,* that no more shall be paid for such services than shall be determined by resolution of the Board of Supervisors of the county for services actually and necessarily rendered.

SEC. 7. Each of said Commissioners may select one or more persons, without pay, to assist him in the discharge of his duties, as he may deem necessary.

SEC. 8. If any County Board of Commissioners, after having received complaint in writing, as provided for in section two of this Act, shall fail to perform the duties of their office, as required by this Act, they may be removed from office by the Board of Supervisors, and the vacancy thus formed shall be filled in the same manner as provided for in this Act.

SEC. 9. Nothing in this Act shall be construed so as to affect vineyards or their products.

SEC. 10. This Act shall take effect immediately.

QUARANTINE RULES

FOR THE

Protection of the Viticultural and Horticultural Industries of the State.

VITICULTURAL QUARANTINE RULES AND RECOMMENDATIONS.

BOARD OF STATE VITICULTURAL COMMISSIONERS,
OFFICE OF CHIEF EXECUTIVE VITICULTURAL OFFICER,
No. 111 Leidesdorff Street, San Francisco.

To all whom it may concern: Be it known, that I, Charles A. Wetmore, Chief Executive Viticultural and Health Officer of the Board of State Viticultural Commissioners, being duly authorized and instructed by said Board, do declare the following quarantine rules and regulations for the protection of the viticultural industries of this State; and due notice is hereby given, as provided by law, thirty days of publication in two daily newspapers of general circulation, not of the same city or county, in this State, and by posting notices in all counties affected by these rules. All parties concerned therein are required to conform thereto, subject to penalties provided for by law for any infraction or evasion of said rules and regulations:

RULE 1. All cuttings of grapevines made in this State for sale, gift, or distribution outside of the vineyard or vineyards where the same were grown, and intended for new plantations, shall be made solely of the wood of the preceding year's growth; all older wood to be carefully and thoroughly removed before leaving the vineyard where made, and to be immediately destroyed by fire, if removed from such cuttings, wherever seized by any duly authorized inspector for any invasion or infraction of this rule. The reason for this rule is, that the Winter egg of the phylloxera vastatrix is, according to the best authorities, found only on the old wood.

RULE 2. All cuttings of grapevines, and rooted grapevines, imported from any region or country outside of this State, intended for sale, gift, or distribution for plantation in this State, shall be disinfected at the place of first consignment within this State before being further distributed or planted, the method of disinfection to be at the option of the owner or agent in charge of the said cuttings or vines, according to any one of the following methods, viz.:

First—Dissolve sulpho-carbonate of potash in cold water; proportions, ten pounds of sulpho-carbonate to one hundred gallons of water; immerse cuttings and rooted vines fifteen minutes.

Second—Dissolve Little's soluble phenyle by pouring upon it cold water in the proportion of fifty gallons of water to one gallon of the phenyle; immerse cuttings and rooted vines ten minutes.

Third—Take two parts heavy oil of coal tar, two parts water, and one part carbonate of potash or carbonate of soda; put in a covered vessel and heat gently to boiling point for one hour; replace water lost by evaporation; pour into suitable vessels and agitate violently; dilute with fifty parts of cold water; immerse cuttings and rooted vines ten minutes.

Fourth—Dissolve carbolic acid crystals in water, in proportion of one pound of acid to twenty gallons of water; immerse cuttings and rooted vines ten minutes.

Fifth—Dissolve sulphide of potash in the proportion of one pound to twenty gallons of water; immerse cuttings and rooted vines twenty minutes.

Sixth—Dilute one part of "liver of lime" in twenty parts of water; immerse cuttings and rooted vines ten minutes. [N. B.—To make "liver of lime," take one pound quicklime, one pound sulphur, one gallon water; mix; boil over quick fire to one half of volume; agitate before using; dilute with twenty parts of water to one part of "liver of lime."]

Any other efficacious method may be used, provided due notice is given to this office and the same be approved.

INSPECTORS.

For the convenience and protection of all interested parties throughout the State, there will be appointed local resident Inspectors, as provided for by law, for each section or region where vine growers desire the same, and upon the application of any three such neighboring growers, or parties intending during the coming season to plant vines, such application to be addressed to this office, and to be accompanied, whenever practicable, with nominations of suitable persons for the office of Inspector. The other Inspectors required by law will be appointed by this office.

RECOMMENDATIONS FOR THE FURTHER PROTECTION OF VINEYARDS.

All persons planting new vineyards within the State are advised and strongly urged to consider all roots and cuttings suspected, regardless of origin, and to thoroughly disinfect them, thereby accomplishing the destruction of all possible germs of insect pests upon them, as well as also those of fungoid disease, which are becoming dangerous in all parts of the country.

CERTIFICATES.

For the further convenience of vine growers, certificates shall be issued by any Inspector residing near the vineyard of the applicant, or the person in charge of cuttings or rooted vines, setting forth that the provisions of Rule Two have been complied with, and shall be entitled to charge in each case not exceeding fifty cents for such certificates made out in duplicate, one certificate being sufficient to cover any quantity of cuttings or rooted vines in the possession of the applicant that may be satisfactorily shown to the said Inspector to have been disinfected. Certificates of disinfection shall likewise be given any applicant who desires the same, and who shall satisfactorily show to the Inspector that cuttings and rooted vines, other than such as are required to be disinfected by Rule Two, have been properly disinfected in accordance with the recommendations of this office.

INFECTED WRAPPINGS, ETC.

Rule 3. All packages and the packing materials coming into the State with imported cuttings and vines (referred to in Rule Two) shall be disinfected at the time of disinfecting the contents thereof, by immersing in or washing with any of the solutions named in Rule Two, provided that the strength of the same, in case of mere washing, shall be increased by the reduction of the water in the same to one fourth the relative proportions named. If not disinfected, such packages and packing materials shall be destroyed by fire.

PENALTIES.

All infractions or evasions of these rules will be punishable according to law.

CHAS. A. WETMORE,
Chief Executive Viticultural and Health Officer.

San Francisco, November 16, 1881.

HORTICULTURAL QUARANTINE RULES.

To all whom it may concern: Be it known, that I, Matthew Cooke, Chief Executive Horticultural and Health Officer of the Board of State Viticultural Commissioners, being duly authorized and instructed by said Board, do declare the following quarantine rules and regulations for the protection of the horticultural interests of the State, and due notice thereof is hereby given as provided by law, to wit: thirty days of publication in two daily newspapers of general circulation in the State, and by posting notices in all counties to be affected by these rules. All parties concerned therein are required to conform thereto, subject to penalties provided for by law, for any infraction or evasion of said rules and regulations:

QUARANTINE RULES AND REGULATIONS FOR THE PROTECTION OF FRUIT AND FRUIT TREES

From insect pests, namely, insects injurious to fruit and fruit trees, authorized and approved by the State Board of Viticultural Commissioners of California. In pursuance of an Act entitled "An Act to define and enlarge the duties and powers of the Board of State Viticultural Commissioners, and to authorize the appointment of certain officers, and to protect the interests of Horticulture and Viticulture," approved March 4, 1881, the Chief Executive Horticultural and Health Officer may appoint local resident Inspectors in any and all of the fruit-growing regions of the State, whose duties shall be as provided in section four of an Act entitled "An Act to define and enlarge the duties and powers of the Board of State Viticultural Commissioners, and to authorize the appointment of certain officers, and to protect the interests of Horticulture and Viticulture," provided that there shall be no compensation for such services of inspection excepting a fee, not to exceed one dollar for each certificate of disinfection, in case of compliance with quarantine regulations, and not to exceed five dollars for each certificate of disinfection after seizure for non-compliance; provided, however, such inspection may be employed at the option of the owners of property requiring disinfection, to disinfect the same. And, also, said local resident Inspectors will be entitled to such other fees as are provided for in cases of conviction and seizures.

1. All tree or plant cuttings, grafts or scions, plants or trees of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, that are known to be injurious to fruit or fruit trees, and liable to spread contagion; or any tree or plant cuttings, grafts, scions, plants, or trees of any kind, grown or planted in any county or district within the State of California, in which trees or plants, in orchards, nurseries, or places, are known to

be infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ. or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, are hereby required to be disinfected before removal for distribution or transportation from any orchard, nursery, or place where said tree or plant, cuttings, grafts or scions, plants, or trees of any kind are grown, or offered for sale or gift, as hereinafter provivded.

2. All tree or plant cuttings, grafts or scions, plants, or trees of any kind, imported or brought into this State from any foreign country, or from any of the United States or Territories, are hereby required to be disinfected immediately after their arrival in this State, and before being offered for sale or removed for distribution or transportation, as hereinafter described; provided, that if an examination of any such importations by a local resident Inspector or the Chief Executive Horticultural Officer, a bill of health is certified to by such examining officer, then disinfection will be unnecessary.

3. Fruit of any kind, infested by any species of scale insect or scale insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit and fruit trees, and liable to spread contagion, is hereby required to be disinfected, as hereinafter provided, before removal off the premises where grown, for the purpose of sale, gift, distribution, or transportation.

4. Fruit of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, imported or brought into this State from any foreign country, or from any of the United States or Territories, are hereby prohibited from being offered for sale, gift, distribution, or transportation.

5. Fruit of any kind, infested by the insect known as Codlin Moth, or its larva or pupa, is hereby prohibited from being kept in bulk, or in packages or boxes of any kind, in any orchard, storeroom, salesroom, or place, or being dried for food, or any other purposes, or being removed for sale, gift, distribution, or transportation.

6. Fruit boxes, packages, or baskets, used for shipping fruit to any destination, are hereby required to be disinfected, as hereinafter provided, previous to their being returned to any orchard, storeroom, salesroom, or placed to be used for storage, shipping, or any other purpose.

7. Transportable material of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, is hereby prohibited from being offered for sale, gift, distribution, or transportation.

8. Tree or plant cuttings, grafts, scions, plants, or trees of any kind, may be disinfected by dipping in a solution composed of not less than one pound (1 ℔) of commercial concentrated lye to each and every two (2) gallons of water used as such disinfectant, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

9. Empty fruit boxes, packages, or baskets, may be disinfected by dipping in boiling water, and allowed to remain in said boiling water not less than two minutes; said boiling water used as such disinfectant to contain, in solution, not less than one pound (1 ℔) of concentrated potash, or three fourths (¾) of one pound (1 ℔) of concentrated lye, to each and every twenty gallons of water, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

10. Fruit on deciduous and citrus trees infested by any species of scale insect or scale insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, may be disinfected before removal from the tree, or from the premises where grown, by washing or thoroughly spraying said fruit with a solution composed of one pound (1 ℔) of whale oil soap and one fourth of one pound of flour of sulphur to each and every one and one quarter (1¼) gallons of water used as such disinfectant, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

11. Owners of fruit of any kind grown in any orchard, nursery, or place in which trees or plants are known to be infested with any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, and all persons in possession thereof or offering for sale, gift, distribution, or transportation, are hereby required to procure a certificate of disinfection before removal for sale, gift, distribution, or transportation.

12. Any tree or plant cuttings, grafts, scions, plants, or trees of any kind, empty fruit boxes, fruit packages, or fruit baskets, or transferable material of any kind, offered for sale, gift, distribution, or transportation, in violation of the quarantine rules and regulations for the protection of fruit and fruit trees, approved by the Board of State Viticultural Commissioners, may be seized by the Chief Executive Horticultural and Health Officer, or by any of the local resident Inspectors appointed by him; said seizure to be the taking possession thereof, and holding for disinfection, or for an order of condemnation by a Court of competent jurisdiction.

13. Any person violating the above quarantine rules and regulations shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by fine of not less than twenty-five nor more than one hundred dollars.

MATTHEW COOKE,
Chief Executive Horticultural and Health Officer.

Sacramento, November 12, 1881.

REPORT OF THE PRESIDENT.

San Francisco, April 19, 1882.

To his Excellency George C. Perkins,
Governor of the State of California:

Sir: In accordance with an Act of Legislature, approved April 15, 1880, and intended to promote the viticultural pursuits of the State, and in accordance with an additional Act "to define and enlarge the duties of the Board of State Viticultural Commissioners, and to authorize the appointment of certain officers, and to protect the interests of Horticulture and Viticulture," approved March 4, 1881, and as President of the above Board of Viticulture, I respectfully submit for your honorable consideration, the following papers, being the labors of the several Commissioners and officers for the past year:

These papers comprise the reports of Commissioners Isaac DeTurk, R. B. Blowers, George West, L. J. Rose, Charles Krug, Arpad Haraszthy, the Secretary; Charles A. Wetmore, Chief Executive Viticultural officer of the Board; Matthew Cooke, Chief Executive Horticultural officer; and the Committee on Phylloxera, Vine Pests, and Diseases of the Vine. To these are added valuable practical information translated from the French and German, of Doctor Ad. Blankenhorn, Professor Gustave Foëx, Professor M. A. Millardet, with full illustrations and, finally, an original paper by our Secretary, John H. Wheeler, on Carbon-bisulphide and Sulpho-carbonates.

The amount of work accomplished by the Board has been enormous, as the submitted papers will show, and the results are most satisfactory, though the Commission has been compelled to limit its usefulness and the extent of its work through a lack of sufficient funds and the want of sufficient printing facilities. Economy has been compulsory everywhere, and though the Legislature allowed the Board $10,000 a year, a large portion of that sum has gone to the support of the horticultural branch of the Commission. It is to be hoped that the next Legislature will see the necessity of separating these two pursuits, and create an ample fund for each of them.

As it is, the two short years since this Board was created, have worked a wonderful change in the viticultural status of our State. In that time it is estimated that fully 40,000 acres of vineyard have been added to the amount already planted, and this is mostly attributable to the information given by, and the labors of this Commission. In short, this Board has received from the Legislature, up to date, fourteen thousand ($14,000) dollars, and has, by its efforts, been the prime cause of the plantation of over 40,000 acres of vines, whose value will be over $10,000,000 in four years hence, without the accessory and needed other improvements that must accompany their maintenance, and which must be set at not less than $5,000,000 more; $15,000,000 of additional taxable property, at an expenditure of $14,000! the State of California can most certainly afford to be liberal. Yet this is merely the initiative of the gigantic strides of an agricultural pursuit whose production at this proportionate rate will, in the near future, rivalize, if not surpass in extent, the famed production of France itself.

But, to accomplish this successfully, our Legislators must be broad and far-seeing in their enactments, and the State must be liberal in its donations and fostering cares. The advancement of this pursuit requires the establishment of at least two experimental vineyards in the State, with proper accessories—a first-class State Chemical Laboratory, a Professoriate of Viticulture, and a State Entomologist—and the whole endowed with ample funds to render their labors practically complete; then our barren plains will teem with wealth and our useless hillsides will yield rivulets of gold 'till future ages.

Among the several dangers that seriously threaten the vineyards of this State, as well as those of the whole world, but more dangerous than any, are the continued attacks and extension of the phylloxera. Your Commission has discovered its presence up to date in the following counties: Sonoma, Napa, Solano, Yolo, Sacramento, San Joaquin, Placer, El Dorado, Amador, Tuolumne, and Santa Clara, and it is my opinion that with a more complete investigation, it will most probably be found in every vine-growing county in the State. This circumstance could well be deemed just cause for alarm, yet it has not hindered the plantation of enormous vineyards, even in the midst of the most seriously ravaged districts. Authenticated reports reach us from abroad that, after years of trial, there have been found American vines that are truly phylloxera resistant, and our importations and plantations of these vines have been very great during this last season. Besides this, the experiments made by this Board in Sonoma, and at its investigation in Napa County, with carbon bisulphide, have proven conclusively that, with the proper application of this chemical agent at the proper season, and by the addition of the necessary fertilizers, the phylloxera can not only be checked in its ravages, but totally exterminated. The cost to secure this result will be less than forty ($40) dollars per acre for that part of the vineyard that is infected. It is my opinion that submersion or irrigation may give the vine new vigor in the fight for existence against the phylloxera, but that neither one nor the other kills the pest. In proof of this assertion, I will state that the insect has been found in abundance just in those places where the water remains the longest. It has been a matter of surprise to those familiar with the ravages of this pest in other parts of the globe, that it has not extended more rapidly with us. In my judgment, the true reason is to be found in the cold nights we have in almost every section of the State during that period when the winged form would come into existence; the coolness of temperature acting adversely to the existence and propagation of the winged insect.

As it would be utterly impossible for your Excellency to peruse in detail the various reports submitted, I will as briefly as possible point out some of their most marked features.

To show the magnitude of the production in Sonoma Valley alone, Mr. DeTurk reports 1,755,939 gallons of wine shipped from Sonoma town by rail to San Francisco, from January 1, 1881, to December

20, 1881. He reports the product of the county one third less than in 1880, owing to severe Fall and late Spring frosts; he nevertheless places the total product of the county at 1,824,650 gallons of wine. He advises the plantation of vineyards on the hillsides, and reports that those planted in such places escaped the Spring frost almost entirely. In his report he complains greatly of the difficulty of gathering reliable statistics even from the vineyardists interested, and draws attention to the urgent necessity of a proper vine nomenclature for the State. Besides an interesting record of rainfall from 1875 to 1881 at Santa Rosa by Mr. J. B. Armstrong, a valuable meteorological report in Sonoma Valley by Robert McP. Hill, a synopsis of the topography and climate of his district, Mr. DeTurk adds a very complete table of the plantations of grapes, their varieties and average, which must have entailed an immense amount of labor upon him. It is as complete as it is comprehensive. These tables show Sonoma County as possessing 11,594 acres planted in vines, and Mendocino and Lake Counties 333 acres in all.

The Commissioner for the Sacramento District, R. B. Blowers, in his very practical report, states that the yield of grapes at last vintage was not up to the usual annual average, but that the deficiency of the crops was counterbalanced by the good prices obtained for grapes, for either shipping, drying, or for wine purposes; attributes the shortness of the crop to the early Fall warmth, which prematurely started the buds, and the immediate succession of very cold weather, which killed them. Also reports that though the weather this last season was very unfavorable to the planting of new vineyards, nevertheless there were numerous plantations made, and their aggregate amount for the district reached 4,000 acres, one half of which were planted to produce raisins. Mr. Blowers reports 10,000 acres of vines planted in his district prior to the Winter of 1881. Most of the vines are planted where they can be irrigated. He complains of the appearance in the vineyards of the vine-hopper, and for its extermination and for the prevention of mildew, strongly recommends a liberal use of sulphur. He fears greatly the future scarcity of vineyard laborers, which is a very serious matter, and should be very carefully considered, especially by those who are so rapidly planting the enormous vineyards we see in every part of the State. A very valuable paragraph on the treatment and appearance of the black-knot is also comprised in his report.

The very ample report of Mr. George West, Commissioner of the San Joaquin Viticultural District, contains valuable meteorological tables from 1879 to 1881, by F. T. Berry, for Tulare; F. T. Eisen, for Fresno; Edward North, for Fresno; George West, for Stockton, and A. N. Porter, for Modesto, Stanislaus County. Mr. West estimates the last season's plantations of vines around Fresno to have been 2,500 acres, and places the total now in vines at 5,100 acres, or more than ten times the amount given by the State Surveyor-General in his last report, he having placed the amount at 425 acres. The county is rapidly filling up, and the utmost activity is everywhere perceptible in the setting out of new vineyards. Mr. Eisen informs him that he had Zinfandel vines three years old that yielded him six (6) tons to the acre. The plantations in San Joaquin County are put by Mr. West at 700 acres last season, and the amount of wine made last Winter at 200,000 gallons. He says that owing to the severe frost in November, 1880, that this was the first unprofitable vintage they have ever had in San Joaquin County. He estimates the cost of planting an acre of vineyard in his section at $13 50, including all the labor and ordinary cost of cuttings. Of course this does not comprise investment, interest, and wear and tear on tools, implements, and animals. He further states that if the land is previously summer-fallowed, one man can plant twenty-five acres during the Spring, and if present prices are maintained, the third year's crop will pay the vineyard's expenses, and which will be in full bearing in the seventh or eighth year. At the same time, following the note of warning given by me in the New Year's number of the San Francisco *Chronicle*, he advises consideration and caution in the plantation of vineyards, advising people not only *not* to accept the present prices for future estimates of income, but to beware of the extravagant estimates made as to the general yield, which he puts down as a good average in his district at from four to five tons only. This report contains some very valuable remarks on the choice and adaptation of the proper vines, and also some very important practical comments on the various qualities and defects of a number of varieties of vines as observed near Stockton. Mr. West complains of the "black knot" last year, but also states that there were much less "thrip or vine-hopper," and no "red leaf" at all. The absence of the latter he attributes to the liberal use of sulphur. Reports the grape crop in Stanislaus County as good, having suffered but little from frost. The plantations of vines in Fresno are all made with a view to irrigation and complete submersion if necessary as a safety against phylloxera, and to secure a larger production. The report also contains complete practical instructions upon grafting by Mr. W. B. West.

The Commissioner for the Los Angeles Viticultural District, Mr. L. J. Rose, reports that though the average yield on the older vines was not equal to that of 1880, still the production of the new bearing vines made up the deficiency, and that on the whole the season was a good one. Following my word of caution given a month and a half previous, as already mentioned, Mr. Rose also fears that we may be planting vines too rapidly. He places the average of vines in his county at 9,000 acres, of which, he states, 6,000 acres were bearing at the vintage just passed. His estimate of the average production in his county is ten pounds to the vine, or five tons to the acre. He places the last year's vintage in Los Angeles County at the following amounts: Brandy, 300,000 gallons; port, sherry, angelica, and sweet muscat, 500,000 gallons; and red and white wines, 2,000,000 gallons.

The report of the Chief Executive Viticultural Officer of the Board, Mr. Chas. A. Wetmore, is presented in printed form, and is of such value, practically, through its compilations, translations, and record of original field experiments and observations, that it might almost be called a Text-book of Viticulture. Thus, it contains experiments made by the Secretary with various insecticides, and gives the results obtained; details of practical demonstrations in the field; fertilizers; valuable illustrations of grafting tools, with the explanation of their use; quarantine regulations that have been adopted by this Board; the study of the phylloxera question, translated from the German of Dr. Ad. Blankenhorn; personal inspection of the vine-growing districts by the Executive Officer; an excellent translation of Prof. Gustave Foëx's Practical Manual of Viticulture, with illustrations; also, a translation of Prof. M. A. Millardet's work, entitled, "The Wild Vines of America;" an excellent original paper on Carbon Bisulphide and Sulpho-carbonates, by the Secretary of the Commission, Mr. John H. Wheeler, with numerous and complete illustrations of implements needed and comprehensive instructions as to their practical use; and finally, the second annual report of the Committee on Phylloxera, Vine Pests, and Diseases of the Vine.

I would especially draw your Excellency's attention to the opening remarks of the Chief Executive Officer's report, showing the very inadequate means the Board commands to carry on its gigantic work, and notably that paragraph wherein the fact is made known that the investigator, Mr. Morse, the Secretary, and Mr. Wetmore have been obliged to advance funds continually, on which, in repayment, they have been subjected to losses by discounts, for which no allowance is permitted by the State Board of Examiners.

In his visits to the different vine districts Mr. Wetmore found the utmost confusion in the nomenclature of the vines; thus a single variety would be called by a different name in each different district, and often from vineyard to vineyard in the same district. This confusion could entail the heaviest of losses upon the planters of new vineyards, for the very varieties they order from neighboring districts, may have proven valueless in their own neighborhood, and coming to them under a different name they could not discover the fact till from three to four years thereafter.

The report of the Commissioner from Napa, Mr. Charles Krug, gives the most encouraging statements of the progress of viticulture in his district. He reports as in bearing in 1881, in Napa 4,000 acres, in Solano 1,048, and Contra Costa 300 acres. The plantations of vines for last season he places, for Napa 4,700 acres, for Solano 523 acres, and Contra Costa 250 acres; or 5,473 acres of new plantations. The total acreage now in vines he places as follows: Napa 11,700 acres, Solano 1,971 acres, and Contra Costa 650 acres; or a grand total of 14,321 acres for the entire Napa Viticultural District. Mr. Krug reports very material losses from the Fall and Spring frosts, nevertheless sets the amount of the last vintage for the district at 2,446,000 gallons of wine, and 56,500 gallons of brandy. Complains of black-knot. He states that everywhere people are alive to the fact that to make superior wines, fine varieties must be planted, and they must be planted in fine soil, with the proper location and exposure. In his section the hillsides are now almost exclusively sought to plant upon. Also reports the beginning of a general use of fertilizers, indicating the most effective ones now employed.

The report of the Chief Executive Horticultural Officer, Mr. Matthew Cooke, is presented in a printed volume entitled "A Treatise on the Insects Injurious to Fruit and Fruit Trees of the State of California," which is filled with illustrations, and a supplemental report upon the actual accomplishment of the duties devolving upon his office. Of the treatise, which is a true text-book for the orchardist, 10,000 have been printed, and of that number but 400 remain to meet the continued demand. Mr. Cooke reports the existence of the codlin moth and red spider in almost every fruit-growing county in the State—is however convinced, through a close observation of the results obtained by individual efforts, that the codlin moth can be exterminated beyond a doubt, and at a nominal expense. He states that the Supervisors of seventeen counties have already appointed

County Boards of Horticultural Commissioners, and that other counties are soon to follow the same course.

It is unfortunate to note, in this able report, that with the exception of San Bernardino County, every fruit-growing county in the State has its orchards or groves afflicted by some serious pest or destructive insect—when it is not the red spider or the codlin moth, then it will be either of the scale insects, the mealy bug, the root louse, the saw fly, or some one or other of the borers. To remedy these evils, Mr. Cooke recommends a strict enforcement of the quarantine rules in the transportation of trees, shrubs, fruit, and fruit boxes, and a concerted action in each center of fruit districts to apply the remedies that are known as effective in the extermination of the various ravaging pests. He states that the work already accomplished, and in progress, is far beyond his expectations, and from their results prophesies the most gratifying returns this coming Spring.

As Commissioner of the San Francisco Viticultural District, I report an estimated plantation for the entire district of 1,000 acres in 1881, and 5,000 this Winter (1882), and 3,000 planted previous to 1881, giving a grand total of 9,000 acres in vines. The most gratifying feature of these recent plantations is, that they have been made with the finest of imported vines, and which have proven themselves, through many years of trial, to be suited in every way to the climate and soil of the locality. There was but little mildew reported this year in Santa Clara County, and the fermentation of the wines was excellent and complete; owing to Spring and Fall frosts, however, the grape crop was materially injured, and the total amount of wine made in this district will not exceed one million gallons. Grapes brought from twenty-five to thirty-five dollars per ton at the last vintage, and all quickly disposed of. The sale of the wine crops of the vintages of 1880 and 1881, was highly satisfactory to the farmers, vineyardists, and wine makers generally, but owing to an unhealthy competition between grower and dealer and between dealer and dealer, the prices obtained, both at home and abroad, have been unremunerative, and hence very unsatisfactory to the trade generally. As to quantity finally disposed of, that, on the contrary, was all that could be hoped for even by the most sanguine, as the following data will go to prove:

The amount of wine received at San Francisco, from the interior, was—

In 1879	3,364,607 gallons.
In 1880	3,759,743 gallons.
In 1881	4,937,876 gallons.

The amount of brandy received was—

In 1879	93,506 gallons.
In 1880	133,764 gallons.
In 1881	157,083 gallons.

Showing an increase for 1881 over 1880 of 1,178,133 gallons of wine and 23,319 gallons of brandy.

The shipments of wine made to points outside of the State by sea and by rail, were as follows:

YEARS.	By Sea.	By Rail.	Total Gallons.
1875	507,809	523,698	1,031,507
1876	516,269	598,776	1,115,045
1877	896,346	566,446	1,462,792
1878	1,238,626	573,533	1,812,159
1879	1,399,094	756,850	2,155,944
1880	1,545,715	941,638	2,487,353
1881	1,505,262	1,340,103	2,845,365

The shipments of brandy made to points outside of the State by sea and by rail, were as follows:

YEARS.	By Sea.	By Rail.	Total Gallons.
1875	39,924	2,394	42,318
1876	36,901	23,092	59,993
1877	64,940	74,052	138,992
1878	91,324	37,875	129,199
1879	95,504	68,388	163,892
1880	97,533	91,565	189,098
1881	60,093	149,584	209,677

The above showing an increase of shipments in 1881 over 1880, of 358,012 gallons of wine, and 20,579 gallons of brandy.

It being a matter of great interest to shippers generally, I herewith add the monthly receipts of wine and brandy, and also the monthly shipments of the same outside of the State:

Receipts of Wine in 1881 *at San Francisco.*

MONTHS.	Bay.	Coast.
January	330,370	720
February	246,351	720
March	481,119	786
April	526,987	10,380
May	547,688	30,924
June	629,964	500
July	541,554	980
August	519,550	940
September	293,183	400
October	176,416	1,180
November	279,829	810
December	312,245	4,280
Totals	4,885,256	52,620 4,885,256
Total number of gallons		4,937,876

Receipts of Brandy in 1881 at San Francisco.

MONTHS.	Bay.	Coast.
January	14,397	240
February	11,163	----------
March	30,037	200
April	17,012	----------
May	19,908	60
June	15,844	----------
July	12,528	----------
August	8,419	40
September	7,725	600
October	3,181	----------
November	5,079	----------
December	10,650	----------
Totals	155,943	1,140 155,943
Total number of gallons	----------	157,083

Exports of Wine by Sea in 1881.

MONTHS.	Gallons.	Cases.
January	129,627	97
February	128,085	460
March	137,180	520
April	109,124	278
May	124,124	574
June	158,146	326
July	109,939	405
August	129,150	132
September	128,478	246
October	117,111	563
November	87,814	354
December	135,542	442
Totals	1,494,320	4,397
Gallons in cases	10,942	
Total number of gallons	1,505,262	

Exports of Brandy by Sea in 1881.

MONTHS.	Gallons.	Cases.
January	3,068	10
February	9,757	13
March	6,751	16
April	5,432	16
May	2,394	----------
June	6,285	----------
July	1,604	150
August	6,313	10
September	5,537	----------
October	4,368	2
November	5,206	4
December	2,773	21
Totals	59,488	242
Gallons in cases	605	
Total number of gallons	60,093	

Railroad Overland Exports of Wine in 1881.

MONTHS.	San Francisco —Gallons.	Interior—Gallons.	Total—Gallons.
January	7,724	6,940	14,664
February	29,196	18,969	48,165
March	79,942	48,619	128,561
April	150,784	17,800	168,584
May	103,998	49,807	153,805
June	69,954	57,850	127,804
July	63,862	21,125	84,987
August	79,387	20,520	99,907
September	75,312	26,695	102,007
October	172,619	45,687	218,306
November	110,994	28,899	139,893
December	34,736	19,100	53,836
Totals	978,508	361,595	1,340,103

Railroad Overland Exports of Brandy in 1881.

MONTHS.	San Francisco —Gallons.	Interior—Gallons.	Total—Gallons.
January	720	2,374	3,094
February	449	4,856	5,305
March	3,127	5,438	8,565
April	10,146	5,027	15,173
May	4,769	11,349	16,118
June	5,739	10,238	15,977
July	4,609	1,739	6,348
August	5,073	11,636	16,709
September	11,211	9,278	20,489
October	7,483	12,970	20,453
November	6,275	4,412	10,687
December	5,373	5,293	10,666
Totals	64,974	84,610	149,584

Owing to the general frosts throughout the State, both in Fall and late in Spring, the vintage was diminished in quantity at least one third, and the most reliable authorities place the amount of wine made, of all kinds, at less than 9,000,000 gallons, including what was distilled into brandy.

The exports by sea of wine and brandy, from 1870 to 1881 inclusive, were: Wine, 10,092,648 gallons, valued at $6,208,692; brandy, 748,177 gallons, valued at $1,528,460.

We have to congratulate ourselves upon the universal improvement in the quality of our wines from year to year, and more especially in the very marked improvement made in the quality of our clarets, which are now drank everywhere in our own State, and which have literally driven the French clarets completely out of the New Orleans market. Our State or home consumption has increased most wonderfully, and it is a pet theory of mine, that when we, at home, drink our own wines and approve of them, the people abroad will also drink them, and find them just as good as imported wines, a great deal cheaper and a great deal purer. As to the insect pests of the vine, including the phylloxera, I do not consider that we have anything to fear seriously. The present quarantine laws will limit the chances of extension of their ravages, and when our vineyardists become thoroughly aroused to the necessity of doing something to save their vineyards, they will find their remedies either in the phylloxera resistant vines, or in the proper use of the carbon bisulphide and the necessary fertilizers.

Thanking your Excellency for the great personal interest you have ever taken in the labors of this Commission,

I have the honor to remain,
Very respectfully yours,

ARPAD HARASZTHY,
President of the State Board of Viticultural Commissioners.

FINANCIAL REPORT,

For the Year ending December 31, 1881.

RECEIPTS.		
Balance unexpended December 31, 1880	$2,222 99	
Appropriation for fiscal year ending July 1, 1882	10,000 00	
		$12,222 99
DISBURSEMENTS.		
Office expenses	$1,283 12	
Investigation	965 40	
Salaries of Chief Executive Viticultural Officer, Chief Executive Horticultural Officer, and Secretary	3,950 00	
Advertising Viticultural and Horticultural Quarantine Rules, etc.	238 24	
Lecture expenses	72 25	
Viticultural Reports—		
Printing first edition of First Annual Report of Commissioners	1,257 95	
Illustrations for First Annual Report of Chief Executive Viticultural Officer	301 50	
Distribution of Reports by mail and express	212 67	
Traveling expenses of Chief Executive Viticultural Officer	311 60	
Traveling expenses of Chief Executive Horticultural Officer	95 05	
Traveling expenses of Viticultural Commissioners	288 00	
Experimental work	878 46	
		9,854 24
Balance unexpended		$2,368 75

Respectfully submitted,
JOHN H. WHEELER, Secretary.

REPORT OF THE SECRETARY,

JOHN H. WHEELER.

OFFICE OF BOARD OF STATE VITICULTURAL COMMISSIONERS,
111 Leidesdorff Street, San Francisco, May 20, 1882.

To the Board of State Viticultural Commissioners:

GENTLEMEN: I have to report on all regular duties devolving upon your Secretary, and those relating to office work of the Commission, as having been performed to the best of my ability. Information on grape-growing has been in constant demand during the past year, and the correspondence concerning it has been voluminous and constantly increasing.

The subjoined reports of meetings held, and the report on finance, are herewith tendered.

In distributing the Reports, published during the past year, the following plan has been adhered to: To each of the vine growers on the list* kept by me—nearly one thousand, at present—a copy has been sent by express; after this list, come the daily newspapers of the State, County Supervisors, Commissioners—Viticultural and Horticultural—County Commissioners, wholesale wine dealers, viticultural associations, and the leading authorities on grape growing and wine making in foreign countries. The last has been as widespread as possible; Europe and the United States generally have been favored. These reports have, to my actual knowledge, been the means of bringing many persons to California for the express purpose of engaging in grape growing and wine making. Each Commissioner has been provided with a sufficient number of reports to enable him to supply all new vine growers, and other applicants interested in the subject, not otherwise supplied, within his district.

In July, 1881, there were circulated, through the aid of Commissioners, Inspectors, and other means, three thousand five hundred blanks, for the purpose of obtaining viticultural statistics. These blanks were so framed as to be headed with the name of the person giving the information, the vicinity comprised in his report, and its location. The filling out of the blanks required the name and post office address of the vine grower, varieties of vines cultivated by him, number of acres planted prior to 1879, number of acres planted in 1879, number of acres planted in 1880, number of acres planted in 1881, total, and product for 1880 estimated in tons of grapes, pounds of raisins, or gallons of wine.

Quite as discouraging results have been met with in endeavoring to obtain statistics, as is found chronicled in the reports of the several Commissioners. The use of blank forms and communications through the mails seem inadequate, unless followed by other means to fill up discrepancies. The scrap-books which I have kept show much, but their contents are fragmentary, and a great deal of the information so uncertain, as to be of little value. The only hope of obtaining reliable information seems to be in the employment of a competent person to go through the different districts of the State, and thoroughly investigate each section, and thus establish, by observation and proper inquiry, the acreage, varieties, amount of products, etc.; not that certain results would be had even by this careful means, but that the nearest possible approximation to the true facts could be thus obtained. It becomes a question whether, with the great changes constantly taking place, setting-out of new vineyards, changing ownerships, etc., it would ever pay. But if it be necessary, and this is one of the matters on which the public expect and demand information—and for which there is a constant inquiry at this office—then must it be obtained by some special and direct means.

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*To this list new names are added as fast as acquired by application for Reports, or other means.

In August, five thousand viticultural meteorological tables were circulated throughout the vinegrowing districts of the State, framed to give the name of the recorder, place where record was kept, county, and calendar month. The columns were arranged to give the date, temperature (Fahr.) at sunrise, at two p. m., at sunset, and the daily mean. Then followed columns headed "Wind," "Rain," "Duration of fog," "Vines injured by frost," and general observations. Better results have come from these, than from the blanks requesting statistical information.

Of fifteen hundred printed quarantine rules for the protection of the viticultural and horticultural interests of the State, published in December, one thousand were sent to Postmasters, Sheriffs, and other officials, outside of the Commission. Accompanying each was a communication, requesting the recipient to notify the Commission of the proper posting of the rules. Over one hundred direct acknowledgments were had, besides indirect information of their extensive circulation; two thousand copies have been distributed in pamphlet form.

In compliance with the law, which provides that all quarantine rules enacted by the Board shall be published at least thirty days, in two daily newspapers of general circulation in the State, not of the same city, the above mentioned rules were published: Viticultural—in the Napa Daily Register, commencing November 21st, thirty times; in Sacramento Daily Record-Union, commencing November 19th, thirty times; Horticultural—in the San José Daily Mercury, commencing November 29th, thirty times; in the Sacramento Daily Record-Union, commencing November 14th, thirty times.

Since April 6th, I have been gathering together and placing on file information on the different viticultural districts. Counties are segregated, and their advantages and disadvantages for grape growing are kept on record; the names of grape growers and cellarmen of the different counties are kept in the record, also the production and shipments of the different parts of the State. Shipments of wines, brandies, raisins, and fruits, are made the subjects of special note. I am also gathering together all available information on vine diseases and their remedies, both as found in foreign countries and in California, in order that our people may lose no time with useless or obsolete methods.

A large part of the experimental and investigating work performed at this office has already been submitted, and gone before the public; particularly, in the First Annual Report of the Chief Executive Viticultural Officer, which contains the results of experiments on the phylloxera with different insecticides, and a treatise on the use of carbon bisulphide and sulpho-carbonate of potassium for destroying phylloxera in vineyards. The part devoted to insecticides and their use, includes translations from the French on the latest experiences had in foreign countries, and a history up to the present of the use of insecticides in California. Then follow directions for the treatment of diseased vineyards, accompanied by charts and diagrams illustrating the methods applicable to the different systems of vine culture. Apparatus for administering the remedies is also shown.

The report on "Investigations of the Phylloxera," which precedes this article, may be noticed as the latest work in the department. Other than the above, I have been conducting experiments in the field and at the office of the Board, the results of which are not yet ready for publication. For instance, search is being made for the winged phylloxera by every means available. The only reward, up to this writing, has been the discovery of a single one on the root of a vine from Sonoma. The insect was found at a stage when just ready to leave the ground.

Many of the subterranean insects have been put under glass for development, but I have been unable to produce the winged insects by this means, although one case has come to my knowledge in which this plan was successful and brought forth the perfect insect. One means of conducting the search in the vineyard, was by the erection of screens covered with sticky material—fly-paper, or other similar substances. All efforts proved futile, though I attribute the failure, in great measure, to imperfect apparatus. The excessive heat of the sun, in the necessary exposure, renders it very difficult to provide a material which will continue sticky for any length of time. New plans will be resorted to hereafter, and I hope yet to be successful, although the most pleasing discovery would be the proof of its absence.

A large microscope has been purchased for office use, which has served a valuable purpose in distinguishing the phylloxera and other parasites. By means of this instrument the phylloxera, in all stages of development, are exhibited to visitors at the office, in order to give the latter such a familiarity with its varying appearance as to enable them to detect the disease when it first appears in the vineyard.

Specimens of vine diseases are being received from various parts of the State. The same are examined, and information forwarded to the vinegrower as to the true nature of the specimens. A very common disease complained of during the past year was black-knot. Many have even thought it attributable to the presence of the phylloxera or other insects.

In advising the choice of varieties for planting, and their appropriateness to the different localities, the Chief Executive Officer, Charles A. Wetmore, has accomplished a great work. The most inquiry at present is pertaining to this part of the subject, which has been made a special study by him. I am able to state that many happy successes have already appeared with those who have solicited his advice on the subject of new plantations. The many inexperienced vinegrowers entering the business in California, make his services particularly valuable, with the present confusion in names of varieties and the widespread ignorance of choice varieties.

I have had the pleasure, as Secretary of the Board of State Horticultural Commissioners, of following a line of duty on this Board similar to that followed in the viticultural department; having kept similar records, and having imparted all information within my power concerning fruit growing, whenever application has been made. In the interest of this department, a trip was made for experiments on the cottony cushion scale, at Santa Barbara, by sulphide of carbon vapor enclosed in a tent. The work proved perfectly successful, and the plan has since been used on a large scale. A full report of the work was submitted at the Fruit Growers' Convention, held at Sacramento, in December, and printed in full in the report of their proceedings.

Respectfully submitted.

JOHN H. WHEELER,
Secretary.

REPORT OF I. DeTURK,

COMMISSIONER FOR SONOMA DISTRICT.

Santa Rosa, January 25, 1882.

To the Board of State Viticultural Commissioners:

Gentlemen: Having the honor to represent the viticultural district of Sonoma, I submit for your consideration my report for the year, A. D. 1881, as follows, to wit: This viticultural district comprises the counties of Sonoma, Mendocino, Lake, Marin, Humboldt, Del Norte, Trinity, and Siskiyou, of which number Sonoma County is the only one in which the culture of the grapevine has been a success, and has become an industry of great importance, and I therefore presume that a short synopsis of the topography of the county will be of general interest, especially to those who desire to embark in this enterprise.

TOPOGRAPHY.

Sonoma County is bounded on the south by the Bays of San Pablo and San Francisco, and Marin County; on the west by the Pacific Ocean; on the north by Mendocino County; on the east by Napa and Lake Counties, and lies twenty-five miles north of the City of San Francisco. Its sea coast line, following the indentations of the shore, is about sixty miles; its average length from north to south, about fifty miles, and its area, in round numbers, about 850,000 acres.

CLIMATOGRAPHY.

Sonoma County has a variety of climate, and it is a difficult task to give a correct description. The average rainfall is about one quarter more than at San Francisco, fifty miles south. We have never, since the American settlement of the county, lost a crop from drouth, though other parts of the State have suffered severely. This is particularly due to the fact that our coast line is thirty-five miles west of a due north line from San Francisco. The season of rain in this section may be said to commence in October and end in May, though it sometimes rains in June. As soon as the rain commences in October, the grass begins to grow, and by the middle of November the hills and pastures are green. The season in Sonoma County begins a month sooner and ends six weeks later than in Southern California; this in itself is one of the greatest advantages over other parts of the State as it insures the farmer a certain crop every year.

The soil of Sonoma County is much diversified. The valley land is fertile and well adapted to general agriculture but unfit for the vine. The foothills and hillsides have proven to be unsurpassed for grape culture, producing a crop equal to any in this State for dry wines, both red and white. The great excellence of these uplands has been only appreciated within the last few years, during which period the planting of vines has been an interest of the first importance in Sonoma County. The acreage of vineyards has increased one half in three years, and will, in the next five years, be quadrupled, and the day is not distant when all the land available for grape culture in the county will be planted in vines.

The greater part of the wine and table grapes grown in Sonoma County are produced in Sonoma Valley and Township, as will be seen from the tabulated statement hereto annexed. The tabulated statement referred to is as nearly correct as it could be made with the time and means at my command. The gathering of statistics is at best a thankless task. There are a number of vintners controlling large vineyards, who either do not know the varieties of grapes they cultivate, or are so narrow minded in their views that they do not care to give the information they do possess. They act as if they were conferring a favor on the gatherer of statistics instead of upon themselves, if they condescend to give any facts connected with grape culture.

In this connection I would advise those intending to engage in grape culture to avoid low, cold valley lands. I consider hillside lands, with a deep soil and south and east exposure, the best for vine culture. Cultivate the land well before planting, this is of the first importance. Select your cuttings from the healthiest locations, and do not leave them exposed to the chances of the sun and cold. By following this course a successful growth, the first year, will be assured, and by continued care and culture more money can be made, one year with another, out of grape culture than any other branch of agriculture.

From information I have ascertained, I estimate the wine product of the county of Sonoma for the year 1881 as follows:

Sonoma Valley	1,750,000 gallons.
Balance of county	601,000 gallons.
Total wine production	2,351,000 gallons.

This estimate makes the wine product of the county about one third less than for the year 1880. The decrease was caused mainly by the remarkably cold spell of weather in November, 1880. In the most exposed localities the thermometer fell to seventeen degrees, the lowest ever known in the memory of the oldest inhabitant. The sap had not left the vine when this unusual cold set in, and the young wood was materially injured. In some instances the tender vines were cut to the ground. Another frost occurred in the Spring of 1881, when the grapes were blossoming, and did considerable injury, especially to vines planted on low bottom lands. The hillside vineyards escaped any material injury from either the Fall or Spring frosts. These facts will sufficiently account for the decreased wine production of 1881.

For further and fuller information in regard to grape culture in my district, I recommend a careful examination of the following exhibit of the number of acres of bearing vines in Sonoma County in the year 1879, and the acreage set to vines in the years 1879, 1880, and 1881, and the relative proportion of Mission, Zinfandel, and mixed varieties. I have been compelled to adopt the classification "mixed varieties," for the reason that many vintners do not know the names of their foreign vines. Under this head is included Riesling, Golden Chasselas, Traminer, Burger, Flame Tokay, Muscat, and all other foreign grapes. I again call the attention of this Commission to the importance of the subject of grape nomenclature. If the varieties of grapes grown in the State were systematically classified it would be of great service to grape growers.

VITICULTURAL STATISTICS

For Sonoma District.

NAME OF TOWNSHIP.	Variety of Vine.	Number of acres planted prior to 1879	Number of acres planted in 1879	Number of acres planted in 1880	Number of acres planted in 1881	Total
Sonoma	Zinfandel	793	235	210	242	1,480
Sonoma	Mission	2,138	40	42	28	2,248
Sonoma	Mixed	1,668	109	282	306	2,365
Vallejo	Zinfandel	104			33	137
Vallejo	Mixed	27			21	48
Petaluma	Mixed	137			83	220
Russian River	Mixed	239	39	127	161	566
Analy	Mixed	43	7	2	25	77
Analy	Zinfandel	27	6	15	43	91
Analy	Mission	103		13	27	143
Bodega	Mission	127		10	24	161
Redwood	Mixed	14			95	109
Washington	Mixed	167	20	102	53	342
Washington	Zinfandel			54	130	184
Washington	Mission	83	4		98	185
Cloverdale	Mission	55		43	16	114
Cloverdale	Zinfandel	13		10	23	46
Cloverdale	Mixed	130		73	137	340
Mendocino	Mission	197			63	260
Mendocino	Zinfandel	53			98	151
Knight's Valley	Mixed	40			60	100
Santa Rosa	Mixed	507	13	151	284	955
Santa Rosa	Zinfandel	191	21	190	369	771
Santa Rosa	Mission	392		29	80	501
Total acreage of Sonoma Co.		7,248	494	1,353	2,499	11,594
Mendocino County	Mixed	30		2	6	38
Lake County	Mixed	37			72	109
Lake County	Zinfandel	28	5	16	137	186
Total acreage of Mendocino and Lake Counties		95	5	18	215	333

NOTE.—1,755,939 gallons of wine were shipped from Sonoma on the narrow gauge railroad to San Francisco in 1881, up to December 20th.

METEOROLOGY.

SANTA ROSA, CALIFORNIA, May 26, 1882.

DEAR SIR: Herewith I forward you rainfall, as measured by me in standard Smithsonian gauge, for the following years at this city, to wit:

1875–6	34.22 inches.
1876–7	15.05 inches.
1877–8	45.05 inches.
1878–9	31.56 inches.
1879–80	31.16 inches.
1880–81	34.22 inches.

Average, 31.876 inches.

Truly yours, J. B. ARMSTRONG.

RECORD OF OBSERVATIONS

Made by Robert P. Hill, residing in Sonoma Valley, County of Sonoma, for the year 1881.

FOR THE MONTH OF JANUARY.

Date.	Temperature—Fahrenheit.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
Jan. 1	44°	70°	60°			Frost.
2	42	72	46			Frost.
3	40	60	44			Frost.
4	40	62	44			Frost.
5	54	64	58			Frost.
6	52	62	44			Frost.
7	36	60	38			Frost.
8	46	62	38			Frost.
9	38	60	42			Frost.
10	40	60	44			Cloudy.
11	44	56	50		Showery	
12	40	56	56		Showery	
13	40	60	58		Stormy	
14	42	60	54		Showery	
15	40	64	50			Cloudy.
16	42	64	44			Clear.
17	40	66	40			Foggy.
18	40	62	48			
19	44	58	50		Rain	
20	44	74	60			Clear.
21	54	78	62			Clear.
22	60	66				Windy.
23	36	66	42			Clear.
24	42	60	42			Heavy fog.
25	40	50	44			Cloudy.
26	46	58	52			Cloudy.
27	50	64	56			Cloudy.
28	52	56	54		Rain	
29	52	54	58		Rain	
30	56	60	56		Stormy	
31	58	60	56			Cloudy.

RECORD OF OBSERVATIONS—Continued.

FOR THE MONTH OF FEBRUARY.

Date.	Temperature—Fahrenheit.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
Feb. 1	54°	58°	58°		Showery	
2	56	62	60			Cloudy.
3	56	62	56		Stormy	
4	56	72	52			Clear.
5	60	72	54			Clear.
6	58	72	58			Clear.
7	56	72	56		Showery	
8	50	70	50			Clear.
9	42	66	56			Clear.
10	42	70	48			Clear.
11	40	64	48			Cloudy.
12	46	56	48		Rainy	
13	46	60	48		Showery	
14	48	70	48			Fog, forenoon
15	46	70	48		Rain	
16	50	56	48		Rain	
17	48	60	50			Cloudy
18	50	70	50			Clear
19	40	70	50			Clear
20	50	68	52			Clear
21	48	76	54			Clear
22	46	70	54			Clear
23	44	76	54			Clear
24	44	78	54			Clear
25	54	76	54			Cloudy
26	52	78	54		Rain	
27	50	70	58			Heavy fog
28	50	64	60			Cloudy

Record of Observations—Continued.

FOR THE MONTH OF MARCH.

Date.	Temperature—Fahrenheit.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
Mar. 1	50°	74°	52°			Clear.
2	44	78	52			Clear.
3	48	74	58			Clear.
4	50	74	54			Clear.
5	50	78	52			Clear.
6	50	74	52			Clear.
7	44	70	52			Clear.
8	48	58	52			Cloudy.
9	48	54	46			Cloudy.
10	38	74	44			Clear and frost.
11	38	64	54			Cloudy and frost.
12	44	62	50			Heavy north wind.
13	42	60	42			Cold wind, snow on m'ts.
14	42	62	44			Heavy frost.
15	38	64	44		Rain	Frost A. M.
16	38	68	46			Clear.
17	34	68	44			Clear.
18	38	78	54			Clear.
19	44	78	54			Clear.
20	44	76	54			Clear.
21	46	80	54			Clear.
22	52	80	62			Clear.
23	48	80	54			Clear.
24	52	72	56			Clear.
25	50	78	52			Clear.
26	54	60	58		Rain	
27	52	74	54			Cloudy.
28	52	78	62			Clear.
29	54	86	66			Clear.
30	56	82	62			Clear.
31	52	76	56			Clear.

Record of Observations—Continued.

FOR THE MONTH OF APRIL.

Date.	Temperature—Fahrenheit.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
April 1	54°	74°	56°			Fog A. M.
2	52	64	56			Cloudy.
3	52	68	54			Foggy.
4	54	64	56			Foggy.
5	54	66	54		Rain	
6	54	74	62			Clear.
7	40	70	50			Clear.
8	46	66	54			Clear.
9	42	62	56		Rain	
10	44	68	54			Changeable.
11	48	70	58			Foggy.
12	52	70	56			Foggy.
13	52	74	58			Foggy.
14	50	84	62			Clear.
15	54	86	60			Clear.
16	60	66	60			Cloudy.
17	56	60	58		Rain	
18	54	80	60			Clear.
19	52	78	58			Clear.
20	52	78	58			Clear.
21	56	74	58			Clear.
22	50	76	54			Clear.
23	52	64	50		Rain	
24	50	72	56			Clear.
25	50	82	62			Clear.
26	60	84	66			Clear.
27	54	88	64			Clear.
28	56	86	62			Clear.
29	52	78	58			Clear.
30	56	64	56			Clear.

Record of Observations—Continued.

FOR THE MONTH OF MAY.

Date.	Temperature—Fahrenheit.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
May 1	54°	74°	56°			Foggy.
2	54	78	56			Clear.
3	50	80	56			Clear.
4	48	80	58			Clear.
5	60	78	52			Clear.
6		80	60			Clear.
7		82	60			Clear.
8		80	60			Clear.
9		74	56		Light rain.	Cloudy all day.
10		80	56			Clear.
11		82	56			Clear.
12		82	54			Clear.
13		86	68			Clear.
14		88	62			Clear.
15		86	60			Clear.
16		86	56			Clear.
17		88	58			Clear.
18		94	68			Clear.
19		92	58			Clear.
20		82	54	North		Clear.
21		74	50			Heavy fog A. M.
22		76	54			Threatening rain.
23		84	54			Clear.
24		82	56			Clear.
25		82	52			Clear.
26		80	50			Clear.
27		76	54			Clear.
28		82	56			Clear.
29		88	62			Clear.
30		78	58		Rain P M.	
31		82	62			Clear.

Record of Observations—Continued.

FOR THE MONTH OF JUNE.

Date.	Temperature—Fahrenheit.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
June 1		86°	64°			Clear.
2		82	60			Clear.
3		72	60			Clear.
4		70	50			Clear.
5		80	56			Clear.
6		76	56		Rain, night.	
7		72	58	Cold north wind.		Clear.
8		80	58			Clear.
9		84	56			Clear.
10		84	60			Clear.
11		82	66			Clear.
12		92	72			Clear.
13		94	72			Clear.
14		86	66			Clear.
15		86	60			Clear.
16		95	60			Clear.
17		86	54			Clear.
18		77	56			Clear.
19		78	54			Clear.
20		82	60			Clear.
21		92	64			Clear.
22		92	68			Clear.
23		92	64			Clear.
24		92	62			Clear.
25		92	66			Clear.
26		100	68			Clear.
27	62°	84	60			Clear.
28	60	86	54			Clear.
29	54	80	58			Clear.
30	54	76	56			Clear.

RECORD OF OBSERVATIONS—Continued.

FOR THE MONTH OF JULY.

Date.	TEMPERATURE—FAHRENHEIT.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
July 1	56°	78°	54°			Clear.
2	58	80	58			Clear.
3	56	94	60			Clear.
4	54	104	64			Clear.
5	56	99	62			Clear.
6	58	96	64			Clear.
7	56	90	62			Clear.
8	58	86	64			Clear.
9	56	88	62			Clear.
10	58	90	62			Clear.
11	60	92	74			Clear.
12	58	90	68			Clear.
13	56	86	62			Clear.
14	56	90	60			Clear.
15	58	82	60			Clear.
16	56	98	70			Clear.
17	58	98	62			Clear.
18	56	90	64			Clear.
19	60	90	74			Clear.
20	58	99	68			Clear.
21	60	102	70			Clear.
22	62	99	68			Clear.
23	58	92	74			Clear.
24	58	88	60			Fog, forenoon.
25	60	90	64			Fog, forenoon.
26	58	86	64			Fog, forenoon.
27	58	84	64	Wind		Clear.
28	58	86	56			Clear.
29	64	86	64			Clear.
30	64	88	66			Clear.
31	62	98	70			Clear.

RECORD OF OBSERVATIONS—Continued.

FOR THE MONTH OF AUGUST.

Date.	Temperature—Fahrenheit.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
Aug. 1	58°	90°	64°			Clear.
2	54	98	68			Clear.
3	58	94	60			Clear.
4	52	90	74			Clear.
5	60	98	70			Clear.
6	62	94	74			Clear.
7	60	94	64			Clear.
8	62	94	68			Clear.
9	62	94	70			Clear.
10	60	94	68			Clear.
11	64	84	60			Clear.
12	58	84	60			Heavy fog.
13	56	90	64			Clear.
14	56	90	68			
15	62	88	58			
16	54	80	60			Slight fog.
17	60	80	58			Clear.
18	58	88	54			Clear.
19	58	82	62			Clear.
20	56	80	56			Clear.
21	58	90	64			Clear.
22	60	90	56			Clear.
23	58	82	56			Heavy fog.
24	54	80	58			Heavy fog.
25	52	78	54			Clear.
26	54	78	60	North		Clear.
27	56	86	88	North		Clear.
28	58	88	68			Clear.
29	60	86	70			Clear.
30	50	92	60			Clear.
31	50	88	62			Clear.

RECORD OF OBSERVATIONS—Continued.

FOR THE MONTH OF SEPTEMBER.

Date.	TEMPERATURE—FAHRENHEIT.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
Sept. 1	54°	86°	60°	North		Clear.
2	56	86	64			Clear.
3	58	80	60			Clear.
4	58	90	74			Clear.
5	60	98	70			Clear.
6	58	100	70			Clear.
7	56	90	62			Clear.
8	52	84	60			Clear.
9	60	86	64			Clear.
10	54	96	62			Clear.
11	64	88	58			Clear.
12	50	84	60			Clear.
13	52	92	70			Clear.
14	60	104	70			Clear.
15	70	102	60			Clear.
16	62	98	74			Clear.
17	58	94	62			Clear.
18	60	88	64			Clear.
19	48	86	60			Clear.
20	50	84	58	Heavy, north		Clear.
21	48	80	60			Cloudy.
22	60	62	58		Rain	
23	46	78	56			Clear.
24	52	84	62			Clear.
25	50	88	68			Clear.
26	54	88	60			Clear.
27	56	90	62			Clear.
28	46	90	60			Clear.
29	50	90	60			Clear.
30	50	90	62			Clear.

RECORD OF OBSERVATIONS—Continued.

FOR THE MONTH OF OCTOBER.

Date.	TEMPERATURE—FAHRENHEIT.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
Oct. 1	46°	80°	52°			Clear.
2	50	78	50			Heavy fog, forenoon.
3	58	70	48		Rain, night.	Clear.
4	46	76	56			Frost around Sonoma.
5	46	76	56			Frost around Sonoma.
6	46	78	58			Frost around Sonoma.
7	50	78	56			Clear.
8	48	72	52			Clear.
9	46	86	60			Clear.
10	44	74	50			Clear.
11	52	82	48			Clear.
12	44	74	50			Frost around Sonoma.
13	48	68	48	Cold north		Frost around Sonoma.
14	36	68	48			*Heavy frost.
15	44	64	46		Heavy rains.	
16	40	74	46			Heavy frost.
17	40	72	52			Heavy frost.
18	44	72	54			Heavy frost.
19	48	86	58			Heavy frost.
20	56	82	54			Heavy frost.
21	48	84	50			Heavy frost.
22	42	82	48			Heavy frost.
23	48	84	52			Heavy frost.
24	52	80	50			Cloudy.
25	52	82	60			Cloudy.
26	54	58	54		Rain	
27	50	64	54		Rain	Very foggy.
28	52	74	54		Showery	
29	50	74	54			Heavy fog, forenoon.
30	52	86	54			Clear.
31	50	72	52			Clear.

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* On the fourteenth instant the frost injured all the vines in the lower part of the valley, all those in the neighborhood of Glen Ellen, and those in this neighborhood on the low flats.

RECORD OF OBSERVATIONS—Continued.

FOR THE MONTH OF NOVEMBER.

Date.	TEMPERATURE—FAHRENHEIT.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
Nov. 1	50°	80°	60°			Clear.
2	50	78	50			Clear.
3	42	80	50			Clear.
4	42	84	48			Clear.
5	44	80	54			Clear.
6	48	76	52			Clear.
7	50	72	54	North		Clear.
8	42	70	66	North		Clear.
9	50	72	60	North		Clear.
10	48	76	64			Clear.
11	40	72	46			Clear.
12	40	72	50			Clear.
13	46	78	60			Clear.
14	50	64	52		Rain	
15	52	52	46		Rain A. M.	
16	34	50	38		Rain	
17	34	56	36			Frost
18	32	62	36			Heavy frost.
19	30	58	36			Heavy frost.
20	34	60	40			Heavy frost.
21	36	64	40			Heavy frost.
22	34	64	42			Heavy frost.
23	38	66	40			Frost.
24	34	66	42			Frost.
25	34	64	44			Frost.
26	36	64	42			Frost.
27	46	66	52			Cloudy.
28	50	64	52		Rain	
29	44	64	40			Clear.
30	44	56	46			Cloudy.

RECORD OF OBSERVATIONS—Continued.

FOR THE MONTH OF DECEMBER.

Date.	Temperature—Fahrenheit.			Wind.	Rain.	State of Weather.
	6 A. M.	12 M.	9 P. M.			
Dec. 1	48°	54°	38°		Rain	
2	32	54	34			Clear.
3	36	52	48			Cloudy.
4	50	54	54		Rain	
5	54	60	56		Rain	
6	52	62	50		Showery	
7	48	50	50			Heavy fog A. M.
8	44	52	48			Heavy fog A. M.
9	40	52	44			Heavy fog A. M.
10	42	54	48		Rain	
11	50	52	44			Cloudy.
12	50	52	42		Rain	
13	34	60	40			Heavy frost.
14	34	58	42			Heavy frost.
15	44	56	44		Rain	
16	38	62	42			Heavy frost.
17	36	60	38			Heavy frost.
18	34	58	36			Heavy frost.
19	36	60	44			Heavy frost.
20	34	58	42			Heavy frost.
21	36	60	40			Cloudy.
22	34	62	38			Clear.
23	34	60	48		Rain, P. M.	Heavy frost A. M.
24	50	62	42			Cloudy A. M.
25	34	62	44			Clear.
26	44	64	44		Rain	
27	50	66	56		Rain	
28	52	69	52			Heavy fog A. M.
29	48	62	48			Heavy fog A. M.
30	50	60	46			Heavy fog all day.
31	44	48	38			Heavy fog all day.

In conclusion, I wish to mention that the grape interest in the counties of Mendocino and Lake is but very limited, and that in the counties of Marin, Humboldt, Del Norte, Trinity, and Siskiyou, there is none at all.

All of which is respectfully submitted to the Board of State Viticultural Commissioners.

I. DeTURK,
Commissioner for the Sonoma Viticultural District.

REPORT OF CHARLES KRUG,

COMMISSIONER FOR NAPA DISTRICT.

St. Helena, December 26, 1881.

To the Board of State Viticultural Commissioners:

Gentlemen: Viticulture has made considerable progress in the Napa District, including the counties of Napa, Solano, and Contra Costa, during the year 1881, as evidenced by the following:

NAPA COUNTY.

The number of acres of bearing vines has been increased from 3,400 acres in 1880, to 4,000 acres in 1881. There were planted 4,700 acres (over 2,300 acres alone in St. Helena neighborhood); thereby aggregating 11,700 acres in this county. The vintage amounted to 2,016,000 gallons wine and about 50,000 gallons brandy, in fifty-four cellars, a good many substantial, well planned buildings.

It seems to me not improper to state here, that only fine varieties of grapes for wine making were planted, the leading variety being Zinfandel, 1,400 acres, followed by Gutedel (Chasselas), and Riesling. Of Sauvignon, Chauché gris, Burgundy, Charbono, Mataro, Trousseau, and Pinot, I can only report a planting of about 300 acres, with a favorable prospect of larger plantations of these fine varieties for the following year.

SOLANO COUNTY.

Number of acres bearing, about 1,048;* planted during the year, about 523; the vintage amounted to about 350,000 gallons wine, and about 5,000 gallons brandy.

The northern part of Solano pays a great deal more attention to the raising of table grapes for the market, particularly for exportation to the Eastern States than for wine making. I am sorry to be compelled to state that in the southern part of the county (Green Valley and Suisun Valley), the vineyardists are not planting the right varieties of grapes according to the present judgment of the prominent and most experienced wine makers in the State; but I will hope that the future will show a remarkable improvement in this direction.

CONTRA COSTA COUNTY.

Number of acres bearing in 1881, as far as able to learn, about 300 acres; planted, about 250 acres; wine product, about 80,000 gallons; brandy, 1,500 gallons.

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* Green Valley, 435 acres; Suisun Valley, 113 acres; balance of county about 500 acres. For the first two items I am indebted to Mr. E. B. Smith, Cordelia, Solano County.

Recapitulation for the Napa District: Number of acres bearing in 1881, Napa, 4,000 acres; Solano, about 1,048; Contra Costa, about 300 acres; total acres bearing vines, 5,348. Number of acres planted 1881: Napa, 4,700 acres; Solano, about 523 acres; Contra Costa, about 250 acres; total acres planted 1881, 5,473 acres. Vintage 1881: Napa, wine, 2,016,000 gallons; brandy, 50,000 gallons; Solano, wine, 350,000 gallons; brandy, 5,000 gallons; Contra Costa, wine, 80,000 gallons; brandy, 1,500 gallons; total wine, 2,446,000 gallons; brandy, 56,500 gallons. Total amount of acres in vines in 1881: Napa, 11,700 acres; Solano, 1,971 acres; Contra Costa, 650 acres; total average in Napa district, 14,321 acres.

But progress is not only shown in the increase of the number of acres planted during this year. The vintners of this district, particularly those of Napa County, have learned those methods of planting, cultivating, pruning, and caring for vines which are productive of the best results. In accordance with this proficiency, great efforts are made to plant the very best varieties of grapes; to graft the old inferior varieties, as Mission, etc., with a better stock; to cultivate thoroughly and with improved tools, and to support the impoverished soil with proper manures. Good authority assures me that at least $5,000 were invested in the comparatively small county of Napa during last Winter in such manures, the prominent kinds of which were bonedust, suint, lime, ashes, nitrate of potassium, and other potash salts, besides a very large quantity of stable manure. Also in the selection of sites for vineyards, the vintners are a great deal more careful now than formerly, and prefer the hillside to the flat fields of the valleys, partly to better escape frost, but mainly to insure a higher character of grapes. This is particularly observable by the manner in which our vineyards are fast encroaching upon the hills on both sides of Napa Valley.

The confusion in our nomenclature of vines, so often complained of, is gradually diminishing, owing to the laudable efforts of our Chief Executive Officer, who has repeatedly visited our vineyards and consulted with all our prominent grape growers for that purpose.

The heavy frost in October, 1880, has taught us a great lesson. In future nobody will plant any more susceptible varieties, as Zinfandel, Chasselas, and Burger, in low and frosty places, but such lands will be devoted to the hardy Rieslings, Chauchés, Burgundies, etc.

Notwithstanding the presence of phylloxera in many vineyards of my district, the fear of further spread and any serious damage has vanished from our vine growers. The practice is to kill the insect and prevent its further spread by an effective application of proper insecticides and the replanting of the dead vines by the resistant stock.

The black-knot, appearing in a great many vineyards in this district, has done great injury. Our vineyardists consider the cause of this disease, first, too close pruning; and second, heavy frosts either early in Fall or late in Spring. If the roots be found sound, a deep grafting either with a hardy variety, or better with phylloxera resistant stock, is recommended as a remedy.

The raising of seedlings of resistant varieties has received considerable attention, prominent among which stands the Vitis Californica.

The attention of the vine-growers of Napa County has been directed very forcibly to the manufacture of pure wines, as opposed to adulterated products. At a meeting of the St. Helena vine-growers, held on July 16th, 1881, resolutions were adopted condemning in strongest terms any attempt of parties to adulterate their wines or brandies by the addition of any substance of whatsoever kind, and more particularly by the use of glucose. It was further resolved to expose all parties importing or receiving adulterating materials, by publishing their names in the papers of this and eastern States. Also to expose by publication all wine dealers purchasing wines or brandies from wine-makers using glucose; that all fair and honorable means be used by this society to prevent any attempt at such adulteration of the honest product of their vineyards, believing that the very life and future prosperity of viticulture can be maintained only on the solid foundation of absolute purity of products. Conformant to the resolution, petitions were circulated and signed with scarcely any objection, pledging the vine-growers to enforce and conform with rigid strictness to them. Nor has the association been at all backward about enforcing the resolutions, which bid fair to keep out adulterated products and make an everlasting reputation for the purity and honesty of Napa Valley wines and brandies.

With rapid and successful progress made in the past few years in this district, and the marked advancement, characterized especially by the readiness of its members to adopt improved systems of cultivating, of planting the choicest varieties of grapes, not forgetting the introduction of valuable machinery into the wine cellars, the Napa District is accomplishing all possible in the way of improvement, and I hope, will soon earn the merited reward of their exertions.

In conclusion, I desire to call the attention of the Board to the advisability of requesting the next Legislature to annex Lake County to the Napa District. Among others, the following are sufficient reasons: Its position being adjacent to the counties of this district; its close connection by rail (soon to be laid) and county roads, Napa Valley forming the outlet for the most of its products; the close analogy borne by the Lake County and the Napa County soils and climate, thereby rendering Lake County prolific of the same qualities of wines and brandies as counties of the Napa District, and paramount, because of the great interest in Lake County possessed by the residents of Napa County, there being now in the latter many persons owning and planting large tracts of land in Lake County.

I would therefore respectfully recommend that this Board should request the next Legislature to add Lake County to the Napa District.

Respectfully submitted,

CHARLES KRUG,
Commissioner for Napa District.

REPORT OF ARPAD HARASZTHY,

COMMISSIONER FOR SAN FRANCISCO DISTRICT.

Viticultural District of San Francisco,
San Francisco, January 28, 1882.

To the Board of State Viticultural Commissioners:

Gentlemen: This viticultural district comprises the counties of San Francisco, San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey.

My last year's report gave the amount of vines in this district as 3,000 acres, which I find, through further investigation, very nearly correct up to the date given, viz.: December 13, 1880. During the months of January and February, 1881, vine planting took a new start in nearly all of the counties of this district, and it is computed that about 1,000 acres more were set out in vines. This year, 1882, the acres that have been and are being planted in vines, it is said by reliable authority, will not be less than 5,000 additional for the district. At this moment, one single plantation of 400 acres has been completed in Washington Township, Alameda County, making in all 500 hundred acres to one owner. Two miles south of Livermore, there is now being planted, by one owner, another plantation of 400 acres, with the choicest of foreign wine grapes, and in the immediate neighborhood of Livermore, there will be planted, altogether, this Winter, from 1,500 to 2,000 acres, the season permitting. Throughout this entire district, a great number of vine-growers are more than doubling their previous plantations, and by their enthusiasm, have induced a very large number of outside parties to enter into this very promising agricultural pursuit. Thus again, in the vicinity of Pleasanton, the new plantations will reach 200 acres; near Suñol, almost as much—at Niles, forty acres; at Washington Corners, from 150 to 200 more. Through Santa Clara County, we hear of a great number of plantations of fifty and 150 acres. The most encouraging feature of all these plantations of vines lies in the fact that they are, without an exception, made with the finest of foreign varieties, and especially such varieties as are known, through many years of experience, to be suited both to the climate and the soil of the locality; under these circumstances, it will not be a surprise to see the products of these new vineyards rank in the highest order among the future fine wines of our State. Santa Clara, Santa Cruz, and parts of Alameda Counties are preëminently red wine sections, and are destined to produce all shades of red wine, from the delicate flavored, deep tinted, light claret of the Medoc order to the warm, generous, full-bodied, blood invigorating red wine, that recalls the noble products of the world-famed Burgundy. It is only to be hoped that when the products of these new vineyards are ready to be gathered, they will fall into the hands of skilled wine makers, who will know how to secure from them all their possible qualities. Such has been the demand for cuttings of the preferred varieties that they were secured only at an advanced price and through considerable trouble. This demand proved quite a boon to those who had old vines of the required varieties, and gave them a well merited golden harvest.

While the large plantations are all being made with grape vines of undisputed quality, I am pleased to inform you that sight has not been lost of the possible future disastrous spread of the phylloxera, and pains taken to have ready on hand a good stock of phylloxera resisting vines. To meet this contingency, Mr. Charles Wetmore, of our Board, reports having produced the following number of seedlings on his place near Livermore last year: Riparias, 35,000; Californicas, 45,000; Jacquez or Lenoir, 5,000; Arizonicas, 2,000; and other small lots including the Kashmir and Soudan grapes. This year he reports twenty acres in seedlings, consisting of Wild Riparias, Æstivalis, Mustang, Rupestris, Californicas, and Arizonicas, probably producing 1,000,000 seedlings.

Owing to the very severe frosts last Winter and the very late frosts this Spring, the sum total of the grape crop was very materially diminished this year from the year previous. The amount of wine made will hardly go over 1,000,000 gallons for this district. Other than the frosts everything has been satisfactory, and Mr. Charles Lefranc, of San José, informs me that the wine had a perfect fermentation, has a fine color, and is in every way satisfactory. He also informs me that there was little or no mildew this year; but in his section, as well as in every other section of the State he has visited, the vines seem to be affected by a disease shown by reddish yellow spots all over the leaf, which eventually decay where the spots appear. All varieties of the vine seem to suffer alike from this affection. It does not seem to kill the vine so far, but it must certainly greatly affect the quality as well as the quantity of the vines' product. The affection is claimed by some to be the result of a fungoid growth upon the roots of the vine, and a very liberal use of sulphur is recommended.

I will state here that I have met with the very greatest obstacles in gathering any reliable statistics concerning the amount of wine made in the district, and the amount of acres planted in vines. I have been kindly furnished such statements from a few persons concerning their own vineyards, but of all the printed blanks of this Commission sent out in parcels to some seventy-five prominent vinegrowers, I had but three returned, one from Mr. Louis Raggio, of San Benito County; one from C. Freyschlag, of San José, and one from R. T. Pierce, of Santa Clara, all of which I append to this report. Outside of the blanks, I received valuable special information from Mr. Chas. Lefranc, of San José; H. Dowdy, of Hollister; L. E. Osgood, of Washington Corners, Alameda County; E. L. Williams, of Santa Cruz County; A. B. Webster, of Alameda County, and statistical information from Mr. Chas. A. Wetmore, of Livermore, all of which will be found in this report:

VITICULTURAL STATISTICS

Obtained by Louis Raggio, for the vicinity of San Juan, San Benito County, California.

NAME AND P. O. ADDRESS.	Variety of Vine.	No. of acres planted prior to 1879.	No. of acres planted in 1880.	Products for 1880, estimated in tons of grapes, pounds of raisins, or gallons of wine.
Teophile Vache, Hollister	Mostly foreign	*35		10,000 galls. wine; 2,000 boxes retailed in market.
Louis Raggio, San Juan	Foreign	8		About 2 tons retailed in market, and about 1,000 gallons of wine.
Father Clossi, San Juan	Foreign	3		Some wine, quantity unknown, balance used on table.
Issadore Lasee, San Juan	Foreign	3		Retailed half in market, and made 800 gals. wine.
E. W. Bowman, San Juan	Foreign	1½		Sold about 2 tons, used balance on table.
Norman Berry, San Juan	Foreign		1	No product as yet.
Flint & Bixby, San Juan	Fine foreign table grapes	2		All consumed on table and given away.
W. England, Hollister	Foreign	4		Retailed in market; quantity unknown; yield very good.
W. Green, Hollister	Foreign	4		Yield good; quantity unknown.

*40,000 vines.

P. S.—There are a good many more who have small vineyards that prove good, whose names I cannot call to memory. All of the vines, however, are doing well.

Now, Mr. Commissioner, I will give you my opinion and experience in regards to the cultivation of the grape in this county, having cultivated grapes in Italy as well as here, and speaking from experience, I find this climate and soil is equal to the best land in Italy or France for the growth and production of grapes and wine, with the exception of the bottom or low lands which are subject to drafts of wind and frost; but the hills that face to the east and south cannot be excelled in any country, and of which there is any quantity in this county. The quality of wine manufactured here cannot be beat, especially the wine made from the white grape.

About disease in the grape a few words: I find there is no disease in the roots, but only this mildew which makes its appearance the first of June; for which I have found a lasting remedy, which is: Simply two thirds slacked lime and one third sulphur, sifted together twenty-four hours before using, for the first application, and thirty days after one half lime and one half sulphur for the second. This should be applied to the fruit as well as the vine. By this process my grapes are all healthy, not one of the grapes being diseased.

VITICULTURAL STATISTICS

Obtained by E. L. Williams, for Santa Cruz County, California.

NAME.	No. of acres planted prior to 1879.	No. of acres planted in 1881.	Total.	Products for 1880 estimated in tons of grapes, pounds of raisins, or gallons of wine.
John W. Jarvis	11	20	31	Made 12,500 gallons wine.
R. Anderson	22		22	Made 9,000 gallons wine.
Henry Mel	40		40	Made 26,000 gallons wine.
John Lewis	30	14	44	Made 12,500 gallons wine.
D. Emerson	14		14	Sold grapes.
P. Fullar	14		14	Sold grapes.
E. Fitch	15		15	7,000 gals. wine, 150 brandy.
W. W. Waterman	6		6	Made 3,500 gallons wine.
John M. Swinford	40		40	Made 2,200 gallons wine.
William Buchman	8		8	Made 4,000 gallons wine.

P. S.—There are a number of smaller patches of vines in the county not reported up to August, 1881.

VITICULTURAL STATISTICS

Obtained by R. T. Pierce, Secretary of the Santa Clara County Viticultural Society, for Santa Clara County and vicinity, California.

Name and P. O. Address.	Variety of Vine.	No. of acres planted prior to 1879.	No. of acres planted in 1881.	Total.
A. C. Hollenbeck, Mountain View	Mixed	80	40	120
John Snyder, Mountain View	Mixed	30		30
—— Smith, Mountain View	Mixed	10		10
S. Williams, Santa Clara	Trousseau	12		50
	Charbono	38		
J. T. Doyle, Menlo Park	Maj'ty Charbono	50	100	150
B. Pffifer, Santa Clara	Zinfandel	5		15
	Charbono	10		
J. C. Merithew, Santa Clara	Charbono	12		40
	Trousseau	12		
	Mataro	4		
	Malvoise	10		
—— Somerville, Santa Clara	Mixed	20		20
—— Bruce, San Jose	Charbono		30	30
John Bubbs, Saratoga	Charbono		10	10
John Parker, Saratoga	Charbono	10		10
J. B. J. Portal, San José	Burgundy var's.		40	40
S. P. Collins, Santa Clara	Charbono		50	250
	Burger		50	
	Zinfandel		100	
	Mixed		50	
L. M. Pollard, Santa Clara	Charbono		40	40
	Trousseau			
	Zinfandel			
E. M. McTire, Santa Clara			20	20
M. Wright, Santa Clara	Burgundy and Zinfandel		20	20
Santa Clara College, Santa Clara	Mixed	40		40
R. T. Pierce, Santa Clara	Mataro		15	100
	Jacquez		10	
	Herbemont		5	
	Charbono		25	
	Chauché Noir		25	
	Zinfandel		15	
	Petit Pinot		5	
Samuel Milliken, Santa Clara	Zinfandel		20	40
	Charbono		20	
Glendenning Bros., Santa Clara	Charbono and Zinfandel		35	35
Chas. LeFranc, San José	Mixed	150		150
S. P. Stockton, San José	Mixed	80		80
Lone Hill Vineyard, San José	Mixed	80		80
H. M. Naglee, San José	Charbono	50		50
—— Barstow, San José	Mixed	50		50

VITICULTURAL STATISTICS

Obtained by C. Freyschlag, for the vicinity of San José, Santa Clara County, California.

NAME AND P. O. ADDRESS.	Variety of Vine.	No. of acres planted prior to 1879.	Products for 1880 estimated in tons of grapes, pounds of raisins, or gallons of wine.
C. Freyschlag, San José	Mission	80	170 tons made into wine, 27,000 gals.
	Muscat	20	182½ tons wine grapes sent to S. F.
	Zinfandel	20	84¼ tons wine grapes sold at S. José.
	Black Pinot	15	53¼ tons table grapes sold at S. José.
	Reisling	10	
	Charboneau	5	490 tons.
	Other varieties	5	
		155	155 *Acres—Products for* 1881.
			15¾ tons made into wine, 2,300 gals.
			247¼ tons wine grapes sold at viney'd.
			37½ tons wine grapes sold at S. José.
			51½ tons table grapes sold at S. José.
			352 tons.

The White Nice, Barbaroux, and Verdal, don't do well, being too much exposed to cold north winds. Black Hamburg and Catawba want richer soil. The only disease we have to contend with is the mildew; flour of sulphur is the remedy for it.

VITICULTURAL STATISTICS

Obtained by L. E. Osgood, for the vicinity of Washington Township, Alameda County.

NAME.	No. of acres planted prior to 1879.	No. of acres planted in 1881.	Total.	Products of 1880 estimated in tons of grapes, pounds of raisins, or gallons of wine.
Jas. R. Keene	30		30	Sold 40 tons grapes.
Henry Ellsworth		30	30	
Conrad Welles	1½		16½	Made 1,000 gallons wine.
Thomas Millard	15		15	Sold 40 tons grapes.
Leland Stanford	100	25	125	Made 60,000 gallons wine.
Joseph McKeown		6	6	
J. Gallegas	40		40	Sold 150 tons grapes.
John Ayers	80		80	Made 30,000 gallons wine.
Bruce Palmer	70		70	Made 30,000 gallons wine.
J. S. Alemany	20		20	Made 5,000 gallons wine.
M. Segrist	6		6	Made 3,000 gallons wine.
John L. Beard			130	
Jas. Lydon			10	
John Lowrie			35	
Henry C. Gregory			15	

P. S.—There are about one hundred acres more planted in vines in small patches, making in all four hundred and sixty-two acres in vines planted prior to 1879, and three hundred and sixty-six acres of vines planted in 1881, making a total plantation of eight hundred and twenty-eight acres planted in Washington Township up to September, 1881.

It is much to be regretted that only so few returns were made; however, these few are very valuable for future reference, and reflect credit upon those who were public spirited enough to make them. But judging from results obtained as a whole, from long years of previous similar experience, I am led to the conclusion that printed blanks sent out for distribution and voluntary return are a useless expense and a failure. There is but one means of gathering any statistical information approximating accuracy, and that is to employ a competent local vineyardist in each township, making it an object in the way of compensation to go from farm to farm and gather the desired information on the spot, making allowances for over or under statements as his own judgment will show. I am thoroughly convinced that the statements rendered to the Assessors are entirely incorrect.

I have the unpleasant duty to inform this Board that phylloxera has been found on one of the vineyards near San José. Immediately afterwards a Viticultural Club was formed and all the needed precautions taken to prevent its extension to other vineyards.

There was a very great demand for all the grapes grown in the district, and mostly for use by the wine maker. So highly, in fact, were some of the grapes, like the Charbono and Mataro, held in their qualities, that they were eagerly bought up by wine makers at a great distance outside of this district, and the prices ranged, for entire crops, from twenty-five to thirty-two dollars per ton. These prices were of course where the foreign grape predominate, as they do throughout Santa Clara County.

On the whole the wine interest is progressing in the most favorable manner in this district, which is destined in the very near future to become one of the finest and most important of this State.

Very respectfully submitted,

ARPAD HARASZTHY,

Commissioner of the Viticultural District of San Francisco.

REPORT OF R. B. BLOWERS,

COMMISSIONER FOR THE SACRAMENTO DISTRICT.

WOODLAND, January 27, 1882.

To the Board of State Viticultural Commissioners:

GENTLEMEN: I have the pleasure of reporting to you that the general results of vineyard operations in the Sacramento District for the year 1881 are quite favorable, although in many respects the season was unfavorable for the establishment of new vineyards.

The yield of grapes for this year was not up to our annual average, on account of the injury to the vines caused by the unusually cold weather in the latter part of November, 1880. A very warm Fall was succeeded by as cold weather as we ever experienced in mid-winter. The buds being insufficiently developed, were killed, especially in the later ripening varieties of vines and those of a vigorous growth. This, of course, led to short crops in the kinds affected in this manner, and a disappointment in the vineyards planted with injured cuttings. The deficiency in quantity of crops was counterbalanced by a good demand for grapes suitable for shipping, a fair price for wine grapes, and a ready sale of raisins at remunerative prices. The balance of accounts thus being in favor of the producer, has led to the speedy replanting of imperfectly set young vineyards, as well as the planting of many new ones, which in this district, owing to the favorable weather for planting, are now well under way, and in many instances entirely completed. It is to be noted also that more care and judgment is being used in the selection of varieties for planting, and an inclination exhibited by most parties to disinfect according to quarantine rules, and thus protect themselves and others from the spread of insect pests and fungoid diseases. Some large land owners are planting extensive vineyards, which will divert some of the capital heretofore used in the production of cereals and give more continued labor to those in search of employment.

I find that mildew was prevalent more or less in every county of this district, in dry as well as wet soil, except where protected by the use of sulphur, and in each case where sulphur had been used properly there was no mildew. Sulphur should be applied two or three times; first, soon after the first leaves appear; second, before the vine comes into bloom; and third, two or three weeks later.

The grapevine leaf-hopper has been, in some parts of the district, of some damage to the vines. The hopper, or enough of them, live over Winter in any convenient shelter, as in old leaves, among weeds, or in young grass in the contiguous fields, old lumber piles, etc. Then, as soon as the vines begin to grow in the Spring, it deposits eggs on the new growth in large numbers, continuing some weeks. The egg is about the size of tobacco seed, white, and gelatinous or gluey.

Remedy: Clean the vineyard of all hiding places, plow under, and thus destroy all the insects possible. Then, when they begin depositing eggs, dredge the vines with sulphur, using plenty of it, which, adhering to the egg, destroys its vitality. This treatment should be continued every week or ten days until the season for its deposit is passed. One hundred or one hundred and fifty pounds per acre, according to size of vines, is sufficient for the season, destroying insects, as well as all fungoid diseases.

Black-knot. In connection with this subject, as showing the cause of its unusual prevalence, I give an extract from Dr. S. R. Chandler's meteorological observation: "Our cold weather commenced November 13, 1880. Memoranda: Northwest wind and a little ice this morning. November 14, clear and cold, thermometer 18° this morning. November 15, thermometer 16°. Then each morning to the 20th, thermometer 20°; and on the 30th, thermometer 17°, which closed the cold weather for the season." These observations were taken near Yuba City, and give a fair representation of the cold spell of 1880, although this was some four or five degrees colder than at Woodland. This cold weather coming immediately after a month of quite warm growing weather destroyed most of the buds on many of the vines, and also killed some of the wood of that year's growth. The latter part of the succeeding Winter and Spring being quite wet, there was a strong flow of sap in the vines, and not having enough live buds to carry off the pressure the wood was ruptured, and the sap flowing therefrom produced a false growth, which in the Fall and Winter becomes black, hence called black-knot. The remedy is to prune long in the affected vines, providing enough buds to carry the sap without again rupturing the wood. It would perhaps be better in the worst cases to defer pruning until quite late in the Spring, and then the bleeding of the vines will relieve the pressure until new growth can use the sap. The vines can be cut back some in the fore part of Winter to enable the cultivation to be done. The final pruning can be completed as late as the last of March.

In case there are no healthy spurs, the whole vine should be cut off under the ground and grafted. Bleeding will relieve the pressure caused by excessive flow of sap until the graft can carry it.

The number of acres in the Sacramento District planted to grapevines before the Winter of 1881 and 1882, was about ten thousand. In the Winter of 1881 and 1882 there will be at least four thousand acres planted, half of which will be for raisins. The greater portions of these vineyards are planted where they can be conveniently irrigated. Most of those planted in Yolo County can be submerged. This section has probably the best water supply of any part of the Pacific Coast devoted to viticultural industries, Clear Lake being the head of Cache Creek, from which the water is taken and distributed through ditches to various points. Locations where the grade of the land is level enough to permit submersion, and where water can be had for Winter irrigation, other things being equal, are the most valuable, on account of immunity from insect pests and the fertilizing materials contained in the water during the rainy season.

The question is frequently asked, Are our raisin vineyards in the future to be profitable? A reasonably good market seems to be assured for any amount California can produce with many more than the number of available laborers. Unless a large accession of help is obtained from some source, it will be difficult to seasonably handle the grape crop a few years hence.

Respectfully submitted. R. B. BLOWERS.

REPORT OF GEORGE WEST,

COMMISSIONER FOR THE SAN JOAQUIN DISTRICT.

San Joaquin Viticultural District,
Stockton, February 1, 1882.

To the Board of State Viticultural Commissioners:

I submit herewith my official report as Commissioner for the San Joaquin Viticultural District, together with an appendix containing such viticultural and meteorological statistics as have been transmitted to me.

FRESNO COUNTY.

I have received very full reports from some of the viticulturists of this county, and take pleasure in presenting them in detail. I cannot, however, avoid expressing the wish that other counties embraced in my district had exhibited the same interest in the aims and objects of the Commission. Fresno promises to become, in the near future, the largest grape-growing county in the State, no other, within my knowledge, having made such gigantic strides during the past year. The acreage of vineyard embraced in the present report foots up 5,100 acres, more than ten times the amount given (425 acres) in the statistical tables accompanying the last biennial report of the Surveyor-General of the State, to say nothing of vineyards from which no report has been received. The meteorological records of the county also compare favorably with those of other sections of the State, and the average yearly rainfall is fully ten inches. From a report of F. T. Eisen I derive the following facts:

> Soil a sandy loam, intermixed with clay, from ten to fifteen feet deep. Water obtainable at a depth of eight to ten feet. Irrigate from the Kings River through the Fresno Canal and Irrigation Company during the months of January and February. If deemed advisable vineyard can be submerged. Give the preference to cuttings for planting, but rooted vines are better in some places. Make perpendicular holes with an iron bar, two inches broad and three quarters of an inch thick, sharpened at the end; cutting inserted and hole pressed tight; vines eight feet apart each way; cost about seventy-five dollars per acre the first year including leveling, irrigating, and cultivating. Prune the Zinfandel, Malvoisie, Malaga, Black Hamburg, and Muscat to two and three eyes, and the Feher Zagos and Riesling to six and eight eyes. Winter prune in January and February, and think a slight summer pruning in May or June beneficial. Zinfandels planted in 1878 average twenty pounds per vine or six tons per acre. The principal varieties ripen from the middle to the end of August. Among the varieties planted are Zinfandel, Malvoisie, Feher Zagos, Muscat, Black Hamburg, Gray Riesling, Malaga, White Nice, Flame Tokay, Rose Peru, Chasselas, Tinto, Muscatella Gordo Blanco, Hungarian, Australian, and Norton's Virginia. Made 100,000 gallons of wine in 1881; contemplate planting twenty acres of Feher Zagos in 1882, making a total of 225 acres in vineyard.

Record of observations made by F. T. Eisen, residing at Eisen Vineyard, County of Fresno.

MONTHS.	1879.			1880.			1881.		
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.
January	----	----	----	65°	29°	47°	72°	32°	52°
February	----	----	----	68	26	47	74	38	56
March	----	----	----	78	30	54	84	36	60
April	----	----	----	86	44	65	89	45	67
May	----	----	----	94	46	70	97	53	75
June	110°	56°	83°	100	54	77	102	56	79
July	104	62	83	104	64	84	103	57	80
August	107	61	84	104	54	79	102	56	79
September	100	58	79	97	51	74	98	52	75
October	95	43	69	89	47	68	----	----	----
November	72	32	52	79	29	54	----	----	----
December	61	25	43	67	35	51	----	----	----

Report of number of acres, variety of vines, and products of the Eisen Vineyard, for the year 1880.

VARIETY OF VINE.	No. of Acres.	Tons of Grapes.
Zinfandel	47	157
Malvoisie	37	130
Feher Zagos	36	75
Muscat	17	41
Black Hamburg	5	19
Gray Riesling	5	21
Malaga	10	44
Flame Tokay	3	8
Rose Peru	2	6
Chasselas	2	5
Tinto	5	1
Hungarian	3	1
Totals	172	507

Forty-two acres of the vineyard planted since 1879.

Miss M. F. Austin sends the following statistics of Central Colony:

Miss M. F. Austin, thirty acres of Muscat of Alexandria and Muscatella Gordo Blanco, producing ten tons raisins. T. C. White, thirty acres Muscatella Gordo Blanco, six tons raisins. Miss J. Moore, five acres Muscat and Malaga, one ton raisins. C. Mahailority and B. Marks: incomplete. Mrs. Davis, five acres Muscat and Malaga, one ton raisins. J. Hansen, thirteen acres Muscat and Zinfandel, wine. Ray White, seven acres Muscat and Feher Zagos, 1,200 gallons wine. William B. Banister, ten acres Muscatella Gordo Blanco. Captain E. Rowe, three acres Muscat, one ton raisins. Mr. Price, five acres Muscat. Making total of about 110 acres.

Edward North, of Washington Irrigated Colony, reports, September, 1881, a total of 400 acres of vineyard in the Colony, and also says:

I send you herewith viticultural statistics of vineyard acreage in this Colony and meteorological record. Great interest is taken in the vineyard business, almost every one announcing his intention of setting out more vineyard next Spring. I think the acreage next year, at this time, will be fully one thousand acres. The older vineyards have been, as a class, badly neglected. With good care a vineyard of rooted vines (one year from cuttings) should bear in this locality from ten to fifteen pounds of grapes the third season. The soil best adapted to the grape in our county is the white ash. In my vineyard I have on the ashy portions growths which are wonderful. The vines were planted in February, 1881, and were yearlings then; they look now, eight months after planting, like old vines; having grown so much that they could not be cultivated without tearing them badly. A growth of seven feet on a single shoot is nothing unusual. On the sandier portions of the vineyard the growth is ordinary; the care having been the same in both cases.

Meteorological Record kept by Edward North, at Washington Irrigated Colony, Fresno County, California.

MONTHS.	Maximum.	Minimum.	Mean.
September, 1881	107°	46°	77.7°
October, 1881	94	30	63.6
November, 1881	81	23	54.36
December, 1881	71	27	51.4
January, 1882	76	13	44.3
February, 1882	75	24	49.5

Frank A. West, who was detailed to collect statistics in Fresno County, in his report says:

A great deal of planting is being done about Fresno—I think 2,500 acres will be planted this year in this county. Robert Barton is planting 175 acres. Plants with a bar. With the 350 acres planted in 1881, this gives a total of 525 acres. M. Theo. Kearney, of the Fresno Vineyard Company, is planting 160 acres for wine—Zinfandel, Malvoisie, and Feher Zagos, chiefly. Plants with spade. The checks are marked off with stakes eight feet apart, on the outside; furrows are then plowed one way across eight feet apart; a wire is stretched across the other way and the cutting is placed in the furrow where the wire crosses. Three wires are used and the men plant 1,000 vines per day. After planting the furrows are thrown back by a plow. He planted 360 acres in 1881, and now has 520 acres.

A. B. Butler is planting 100,000 Muscatella Gordo Blanco; plants ten by ten, and ten by sixteen feet apart—some long cuttings planted on the layer system; and the rest eighteen inches long are planted, using a flat pointed bar. For marking out the vineyard he uses a sled with three runners, having a tongue to hold it steady. He drives across the check both ways and plants at the intersection of the marks made by the sled. He put out 90,000 vines of the same variety last year, and will have in all 425 acres. Malter & Denicke are planting 250 acres for wine and raisins. They have a number of varieties, chiefly Muscat and Grenache. They planted eighty acres of Zinfandel and Malvoisie last year. For planting they use a small iron bar about half an inch in diameter, with two prongs at the end. This is forced into the ground to make the hole, then withdrawn and the cutting placed between the prongs and forced into the hole. Their total acreage is 330 acres.

Mr. Eggers is planting 200 acres for wine; he had 260 acres in 1881; total, 460. His varieties are Blaue Elba, Zinfandel, Malvoisie, and Feher Zagos. Kirby and Pearsons are planting a large vineyard of Sauvignon, Folle Blanche, Mataro, Grenache, Trousseau, and Verdal, probably 400 acres. Branley and Hughes intend planting 160 acres for raisins. J. F. Goodman plants sixty acres of Muscat, making ninety acres in all. Wm. Forsyth will plant 100 acres of Feher Zagos, Zinfandel, Malvoisie, and Muscatella Gordo Blanco. The Fresno Colony will plant 160 acres for raisins mostly. Washington Colony will plant 750 acres for raisins, perhaps more. The Scandinavian Colony are putting out 100 acres of Muscats. The Church and Central Colonies are old settlements and are not planting much. The most common method of marking out a vineyard is to stake down two sides of a check and plant by a wire stretched across between those two sides; the wire, which is of eight strands, has cloths tied on every eight or ten feet. The Minturn Colony will plant vines in nursery mostly, and root them for next year; the varieties selected are Sauvignon, Folle Blanche, Mataro, Verdal, Charbono, Grenache, Feher Zagos, Trousseau, and Prolific, for wine and brandy, Seedless Sultana, Larga Bloom and Muscatella Gordo Blanco for raisins. It is astonishing to see how fast the country is being settled. New canals are being run out of King's River and a very large tract of land will be put under water.

James W. Minturn, of Borden, Fresno County, sends statement of acreage and varieties planted in that vicinity, viz.:

N. H. Stockton, thirty-seven acres of Zinfandel in 1881, and thirteen acres Zinfandel and five acres table grapes, 1882; total, fifty-five acres. M. O. Hines, in 1881, twenty acres Zinfandel and ten acres Mission; total, thirty acres. Madera Vineyard Company, 1882, twelve and one half acres Mataro, ten acres Grenache, seven and one half acres Mission, five acres Zinfandel, fifteen acres Feher Zagos, ten acres Blaue Elba, five acres Sauvignon, 5 acres Verdelho, five acres Seedless Sultana, fifty acres Muscat, 1,000 Riparia cuttings, 500 table grape cuttings, and 500 olive cuttings, a total of over 125 acres. Planted in 1882, by J. W. Minturn, twenty acres Verdal, twenty-five acres Folle Blanche, twenty acres Charbono, ten acres Sauvignon, ten acres Trousseau, ten acres Burger, and seven acres Muscatella Gordo Blanco, making 122 acres, and the total, for this vicinity, of 332 acres.

SAN JOAQUIN COUNTY.

There is perhaps as large an acreage of good grape land in this as in any county of the State, with a moderate climate well adapted to the growth and health of the vine. There are about 700 acres now in vineyard, one third of which are planted in table grapes for the San Francisco market. About 200 acres have been planted since 1880, and farmers are now beginning to consider seriously the question of growing grapes rather than cereals.

Owing to the frost of November, 1880, the crop of 1881 was the poorest we have ever had, and the only one which has not proved profitable. The question is often asked, Will grape-growing be overdone? The answer must be a many-sided one, and depends altogether upon the manner in which the business is conducted. In my opinion, there are many vineyards being planted now which will not prove remunerative, because not planted on suitable land or with varieties adapted to the climate and soil where grown. People planting should not base their estimates of future profits on the present price of grapes, because they are not justified by the current quotations of wine and brandy. Many extravagant stories are also told about the yield per acre. In most localities, from four to five tons is considered a good average.

We have in this county a great number of varieties which have been grown here for many years, and which are far from proving successful; and yet our soil and climate are certainly as well adapted to the growth of the vine as any in the State. William B. West and I imported and planted in 1852-3 forty varieties of foreign grapes, and since that time we have added sixty or seventy more. Now, from all of these, and as the result of nearly thirty years' practical experience and experiments, we would select for planting not more than eight or ten, and for extended operations not more than two or three varieties. It will take several years to determine the grape best suited to each locality. Many varieties which do well in this immediate vicinity do not thrive ten miles north or south of us on sandier lands, though there is little difference in the temperature. The soil I consider best suited for vine growing in this county is the clay loam, underlaid with marl. Such land can be bought a few miles east of Stockton for from fifty to one hundred dollars per acre.

For the benefit of beginners, I will make a rough estimate of the cost of planting per acre. Plowing and preparing land, two dollars and fifty cents; planting three-foot cuttings with spade, layer system, five dollars; average cost of cuttings, four dollars; cultivating during Spring, two dollars. One man could prepare and plant twenty-five acres during the Spring, providing his land had been summer-fallowed.

Vines will pay expenses the third year, and come in full bearing the seventh or eighth year. I prune vines during February and March, but regard Summer pruning as injurious. Wine grapes sold the past season for eighteen dollars and fifty cents to thirty dollars per ton; table grapes for forty to sixty dollars per ton. Estimated quantity of wine made, 200,000 gallons.

Varieties of Grapes.

The following description of grapes grown in this county may prove interesting to viticulturists: The Black Prince is the most profitable table grape when grown on clayey loam, and is largely planted around Stockton. It was much damaged by the frost of November 13th to 20th, 1880, coming as it did while the vines were in full leaf. Most of the vineyardists are grafting or replanting the same sort. Usually prune to three eyes; does not do well on sandy land. Flame Tokay grows, bears and colors well; short pruning. Ferrara grows and bears well; is one of the best late grapes, often holding on the vines until December; short pruning. Emperor does well on rich, loamy land; long pruning. Verdal grows and bears well on most soils; bunches large and perfect; holds on late; short pruning. Muscat of Alexandria grows poorly, and sets badly; does not do well on any land in this county. The same can be said of most of the Muscat family. The Frontignan, on rich, clayey loam, produces good crops and has a high Muscat flavor. Black Morocco, poor grower; in very favorable seasons bears well. Zinfandel, liable to sunburn; wants long pruning to reduce size of bunches; if short pruned, bunches grow large and are apt to decay if left on the vine late in the season; in favorable seasons produces large crops and makes a dark-colored light wine. Trousseau and Black Burgundy grow and bear well; make fine port; long pruning. Black Hamburg, moderate grower; bears well; is not considered a wine grape, and is too soft for shipment. Charbono and Malvoisie do not grow well here. The Johannisberg and Moselle Riesling, Burger, Sauvignon, Chasselas, Prolific, and Feher Zagos are all white grapes that grow and bear well, and are profitable to plant here. The Mission, which we have always considered one of the most hardy varieties, was badly damaged by the November frost. The Isabella, Catawba, and two or three other American varieties which we have tried, do not thrive on our soil. Among the productive vines that escaped frost last year, are the Prolific, Sauvignon, Frontignan, Burger, Trousseau, Black Burgundy, Chasselas, and Zinfandel.

Ezra Fiske, fourteen miles north of Stockton, reports his Mission and Black Prince badly injured by November frosts; crop about one third usual quantity; sends meteorological report which reads nearly the same as at Stockton.

Diseases.

Black-knot, owing to the frost, did considerable damage to the Mission and Black Prince. This disease is caused by an overflow of sap, from a check in growth, a slight frost in the Spring, or very severe pruning. Vine-hopper or thrip troubled us very little last year. Red Leaf gave us no trouble. A liberal use of sulphur in the early part of the season helped in both cases.

Grafting.

In his report William B. West recommends the following method of grafting, which is given for the benefit of those having less experience in such operations:

> The scions should be kept dormant by burying in a cellar or other cool place until ready for use. I graft about the tenth of April, when the vines have made a small growth, say four

inches. If the vine is only three or four years old it can be easily grafted, but if older or very large it is best to take out the whole of the main stem and graft on a side root; if any of the stem is left it is apt to sucker badly and give much trouble to keep it free. When young and not more than two inches in diameter the stem should be cut off six inches, more or less, from the surface, and the graft inserted. I use cleft grafting; keep suckers off during next Summer and not much trouble will be experienced afterwards. Have not been very successful in grafting on American vines, the grafts outgrowing the stocks.

Record of Observations made by George West, residing at El Pinal Vineyard, County of San Joaquin.

1881.	Maximum.	Minimum.	Mean.
January	66°	32°	45°
February	70	40	55
March	80	34	57
April	80	48	64
May	87	53	70
June	94	54	74
July	93	59	77
August	92	52	72
September	94	48	71
October	82	34	58
November	70	29	52
December	62	30	46

MERCED COUNTY.

In Merced County, with the exception of forty acres planted by Peters and Milco, and another small vineyard by M. D. Atwater, but little is being done and nothing reported. The first named parties are planting Zinfandel, Trousseau, and Johannisberg Riesling for wine and brandy, and Black Prince for table use.

Through the courtesy of R. C. Campbell, I have received from W. N. Sell, Merced, F. T. Berry, Tulare, and W. N. Porter, Modesto, officials of the Central Pacific Railroad at the places named, meteorological records, which will be found in the Appendix to this report. Wm. H. Derrick, of Bachelors' Valley, Stanislaus County, sends meteorological record, which shows an average temperature of four degrees higher than that of Stockton. I learn unofficially that the grape crop of Stanislaus County was very good in 1881, and that very little damage was sustained from frost.

Respectfully,

GEORGE WEST,

Commissioner for the San Joaquin Viticultural District.

RECORD OF OBSERVATIONS

Made by W. N. Porter, Modesto, County of Stanislaus.

MONTHS.	1879.			1880.			1881.		
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.
January	63°	29°	46°	63°	29°	46°	70°	36°	53°
February	76	34	55	66	30	48	72	40	56
March	88	40	64	75	35	55	84	40	62
April	90	50	70	86	48	67	90	50	70
May	94	56	75	94	52	73	98	64	81
June	108	50	79	100	62	81	94	58	76
July	104	68	86	107	65	86	98	62	80
August	107	67	87	104	62	83	94	58	76
September	102	60	81	102	54	78	------	------	------
October	94	48	71	90	48	69	------	------	------
November	72	30	51	78	30	54	------	------	------
December	63	25	44	62	40	51	------	------	------

RECORD OF OBSERVATIONS

Made by W. N. Sell, Merced, County of Merced.

MONTHS.	1879.			1880.			1881.		
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.
January	68°	28°	48°	64°	26°	45°	68°	34°	51°
February	78	30	54	64	28	46	72	40	56
March	92	44	68	74	32	53	82	36	59
April	94	46	70	84	46	65	90	46	68
May	95	53	74	94	50	72	96	50	73
June	105	53	79	98	52	75	107	51	79
July	105	57	81	107	57	82	106	54	80
August	108	60	84	106	50	78	------	------	------
September	106	56	81	102	46	74	------	------	------
October	94	46	70	88	44	66	------	------	------
November	74	34	54	78	28	53	------	------	------
December	66	24	45	64	32	48	------	------	------

RECORD OF OBSERVATIONS

Made by F. T. Berry, Tulare, County of Tulare.

MONTH.	1879.			1880.			1881.		
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.
January	64°	28°	46°	68°	22°	45°	69°	31°	50°
February	68	29	48	68	22	45	69	41	55
March	96	42	69	76	28	52	85	35	60
April	96	44	70	94	42	68	93	53	73
May	98	50	74	100	50	75	98	56	77
June	112	64	88	101	64	82	104	62	83
July	108	68	88	114	76	95	105	62	83
August	112	66	89	111	53	82	------	------	------
September	106	52	79	105	55	80	------	------	------
October	100	48	74	96	44	70	------	------	------
November	80	28	54	76	22	49	------	------	------
December	67	16	41	63	27	45	------	------	------

REPORT OF L. J. ROSE,

COMMISSIONER FOR LOS ANGELES DISTRICT.

LOS ANGELES VITICULTURAL DISTRICT, July 16, 1882.

To the Board of Viticultural Commissioners:

Owing to the many cares of business and the short time before me for making my report, it will necessarily be brief. There has been much anxiety felt fearing a dry season, but to-day the prospect has brightened much, and with the usual and almost certain amount of Spring showers, our grape crop even on uplands, without irrigation, becomes assured. The late rains have washed all nature again green and all faces into smiles. Despondence has given way to hope, and all promises abundance.

The past season has been a very good one for the vineyardist. Prices have been good, and the yield fully up to the average. It is true the yield did not quite come up to the year previous, but this could not be expected, for it was unusually large. Although the yield being less per acre, yet the production of grapes for the district was about the same, and the quantity of wine and brandy made fully up in quantity to 1880, and quality superior. The wine merchant, too, is happy, for he finds ready sale at stiffening prices. This makes the outlook for the coming year a very pleasing one for all around, for it makes a certainty that there will be a demand at good prices for all the grapes that can be produced. How long this may continue becomes a grave question for many now planting new vineyards. I believe in the end, and perhaps in the average, viticulture will be profitable, but it looks to an almost certainty that in the near future it will be overdone, and some one will be hurt and disgusted, and we will again see vineyards neglected and uprooted, as was the case a few years past in this section. Grapes will become low in price, which will make cheap wines. Cheap wines will open up new markets and create new demands, and in the end the demand come up to the production.

The planting of vines is still on the increase, not only in this district, but all over the State, and I believe there are more vines planted in one year than we have bearing vines, and yet preparations for the coming year are already beginning for still more extensive planting.

It is believed, in fact I feel I know, that California in the last two years made about as much wine as the demand required. It may be taken as a fact, that we have no foreign market. That our home demand is gradually increasing is true, but doubling our vineyards every year is an increase far beyond what can be expected in the increase of consumption.

I have felt it due to the public to say this, as it is my belief; for if

I am correct in my belief, then many who are now investing their all will suffer, and even those now engaged in it will also have a hard time. That the future of California is the fruit growing country of America I think sure, and that it will, in the end, be the great wine producing country of the world I also believe, but I fear that we may be going too fast for present profitable investment.

Were I to begin life now with my present knowledge I would prefer to plant fruit trees for the raising of fruits for shipping and canning; also, grapes for shipping. We excel in this line of fruit growing as well as raising grapes for wine. We have our own country for a market, and in addition have the whole of Europe, in fact, the world. California canned fruits are considered the best everywhere, the market is made, whereas for wine to sell abroad, it has to be made yet.

If am in error, no one will be more pleased than myself, for my lot is unalterably cast in grape growing and wine making, and if I appear as an alarmist it is not that I wish to be one, or that considerations of self have any part in what I say, but a disinterested motive to prevent disappointment to others.

I would estimate that there are 9,000 acres of vines now in this county. Of these 6,000 acres were in bearing this year, yielding say 60,000,000 pounds of grapes. This would give at least 4,000,000 gallons of wine if all had been made into white and red wine. It has, however, been made largely into sweet wines and brandy, say 300,000 gallons brandy; 500,000 gallons of port, angelica, sherry and muscatel; 2,000,000 gallons of white and red wines.

Further experience has confirmed the former opinion that this county can make light bodied table wines, both white and red, and of any degree of spirit strength wished for.

Owing to the better understanding, more experience, in the making of wine, and new varieties of grapes adapted to specialties, there is a continued improvement in the quality of our wines.

Lands can be procured here at reasonable prices, in fact, very low prices as compared with other sections of our State, and our shipping facilities will compare favorably both in cost or facilities to any other portion of the State; whereas the climate is unsurpassed anywhere for the whole year, for although we have, perhaps, a more uniform warmth throughout the year, yet the mean temperature does not exceed that of Napa for the Summer.

L. J. ROSE,
Commissioner for the Los Angeles Viticultural District.

REPORT OF MATTHEW COOKE,

CHIEF EXECUTIVE HORTICULTURAL OFFICER.

SACRAMENTO, January 26, 1882.

To the Board of State Viticultural Commissioners:

GENTLEMEN: I respectfully submit the following report relating to the horticultural interests of the State, placed under your supervision by Acts of the Legislature, approved March 4, 1881, and March 14, 1881. Since the date of my appointment by your Board as Chief Executive Horticultural and Health Officer, April 11, 1881, I have visited as many of the fruit-growing districts of the State as practicable, and intend to visit all of them before the fifteenth of March, next.

In compliance with an Act entitled, "An Act to protect and promote the horticultural interests of the State," the Supervisors of the following counties have appointed County Boards of Horticultural Commissioners: Alameda, Amador, Butte, Contra Costa, El Dorado, Los Angeles, Nevada, Placer, Sacramento, Solano, San Bernardino, San Diego, San Joaquin, Santa Barbara, Santa Clara, Santa Cruz, and Yolo.

Section 4 of the above Act, "approved March 14, 1881," requires "the County Boards of Horticultural Commissioners to keep a record of their official doings, and to make a report to the Board of State Viticultural Commissioners, on or before the first day of November, in each year."

The appointments were made so late last season in some counties, that the County Boards had not organized before the first of November, and the appointments in four counties were made since that date. I herewith submit the accompanying reports of the County Boards of Horticultural Commissioners, of the counties of Amador, El Dorado, Nevada, Sacramento, Santa Clara, Santa Cruz, and San Joaquin, in connection with this report marked as hereafter described.

ALAMEDA COUNTY.—In some orchards, of this county, Codlin Moth, Red Spider, Common Apple Scale (*A. conchiformis*), and *A. rapax*, also a species of cut-worm (probably *Anisopteryx pometeria*, or *A. vernata*), have made their appearance. Although they have not spread to a dangerous extent, the fruit growers are doing excellent work to exterminate them. The Board of Supervisors have appointed a County Board of Horticultural Commissioners.

AMADOR COUNTY.—The Codlin Moth is the principal insect pest the fruit growers have to contend with in this county. The County Board of Horticultural Commissioners report: "The Codlin Moth has made fearful ravage in the lower and western portion of the county, up to an altitude of 1,500 feet, and is slowly spreading in orchards in the upper portion of the county." They also report indifference on the part of many of the fruit growers, in regard to making an effort to clear their orchards of this pest. (See report of Commission marked "A.")

Butte County.—In the orchards of this county the Codlin Moth and Red Spider can be found to some extent. The Supervisors have appointed a County Board of Horticultural Commissioners, and preparations are in progress for a united warfare against the spread of any species of insects known to be injurious to fruit and fruit trees.

Contra Costa County.—A County Board of Horticultural Commissioners have been appointed. Although the orchards in this county are not seriously infested; effort will be made to eradicate every species of fruit pests (noxious insects), and prevent their spreading.

Colusa County.—Codlin Moth and Woolly Aphis infest some of the orchards in this county.

Calaveras County.—Codlin Moth is found in orchards of this county. (Reported.)

El Dorado County.—The apple and pear crops, especially the apple crop, have sustained serious damage by the Codlin Moth. The County Board of Commissioners report in one district three fourths of the crop destroyed; that growers seem discouraged, and talk of digging up the trees, and planting stone fruits. However, they report that the growers seem willing and anxious to do anything reasonable to rid their orchards of this pest. (See report marked "B.")

Fresno County.—This county will probably be an extensive fruit growing section, the orchards at present are not infested but to limited extent. The Scale Insect *A. perniciosus* (San José), was found on a few trees in one orchard, and Codlin Moth in two orchards. The fruit growers will petition the Board of Supervisors at their next meeting, to appoint a County Board of Horticultural Commissioners, and are determined to prevent the spread of insect pests in this county.

Kern County.—At present there is but a limited acreage of land planted for fruit growing purposes in this county. But this will undoubtedly become a fruit-growing district. In the orchards the Codlin Moth, Red Spider and Woolly Aphis have been found, though to a very limited extent. The fruit growers will petition the Supervisors at their next meeting to appoint a Board of Commissioners, and say the pests must be exterminated and not allowed to spread.

Lake County.—Codlin Moth has been found in orchards in this county. (Reported.)

Los Angeles County.—The citrus orchards of this county are infested by the scale insects. *Aspidiotus aurantii* (Red Scale), *A. nerii*, *Lecanium Oleæ* (Black Scale), *L. hesperidum* (Soft Scale), and *Acerya purchasi* (White Cottony Cushion Scale), are found in one orchard near Los Angeles, and at one small orchard at San Gabriel. On the deciduous fruit trees, the Codlin Moth and scale *A. rapax*. A County Board of Horticultural Commissioners have been appointed. The County Commissioners called a meeting of the fruit growers of the county on the tenth instant, which was largely attended, and resolutions adopted expressing their intention of organizing a united warfare for the extermination of noxious insects from their orchards. The results of individual efforts made by A. S. Chapman, of San Gabriel, for the extermination of the so called Red Scale, and by Mr. Wolfskill, of Los Angeles, and A. B.

Clark, of Orange, for the extermination of the Black Scale and accompanying Smut (*Fumago salicina*), have furnished proof beyond a doubt that the pests can be destroyed at a nominal cost.

Marin County.—The insect pests damaging fruit trees and fruit in this county are a species of Tent Caterpillar (*Clisiocampa constricta*) and the Codlin Moth. The latter, however, have only appeared last season. There has been no action taken for the appointment of a County Board; but strenuous efforts will be made by the owners of the orchards infested to destroy the pests.

Mendocino County.—Codlin Moth has been found in this county. (Reported.)

Napa County.—Codlin Moth has been allowed to spread in this county; no action taken by fruit growers for getting a County Board appointed.

Nevada County.—The orchards in this county are infested by Codling Moths. The County Board of Horticultural Commissioners are doing excellent work, and are liberally supported by their Board of Supervisors. (See report marked "C.")

Placer County.—The orchards in many localities of this county are infested by Codlin Moth. There are also the scale insects *A. perniciosus* (San José) and *Diaspis Roseae* (Rose Scale) on berry vines to a limited extent. A County Board has been appointed and undoubtedly good results will be gained.

Sonoma County.—The Codlin Moth and Common Apple Scale (*Aspidiotus conchiformis*) are found in orchards in this county. The fruit growers petitioned for a County Board of Horticultural Commissioners, but the Supervisors failed to appoint.

Solano County.—The apple and pear orchards of this county are not seriously infested by Codlin Moth, but enough are found to require an active warfare to destroy them. Red Spider is found in some orchards, especially almond. In one orchard the scale *A. perniciosus* (San José) has been found; also a *Lecanium* on the pear trees. A County Board of Horticultural Commissioners has been appointed.

Sutter County.—Orchards in this county are infested by Codlin Moth to a serious extent. No action taken by the fruit growers for the appointment of a County Board.

Sacramento County.—The apple and pear crops of orchards in this county have been seriously damaged by Codlin Moth in past seasons; but individual enterprise has proven beyond a doubt that the Codlin Moth can be destroyed at a nominal expense. The Supervisors of this county were the first to appoint a County Board under the horticultural law. A majority of the fruit growers of this county are doing excellent work for the extermination of the Codlin Moth. (See report of County Commissioner marked "D.")

San Bernardino County.—The citrous and deciduous fruit orchards in this county may be said to be entirely free from insect pests, such as are injurious to fruit and fruit trees, with the exception of one orchard in the vicinity of San Bernardino, in which the Codlin Moth has been found. The County Board of Horticultural Commissioners will have this orchard cleansed of the pest.

San Diego County.—In some districts of this county the citrus trees are infested by the *L. oleæ* (Black Scale) and the *L. hesperidum* (Soft Scale), but not to any serious extent. A County Board of Horticultural Officers have been appointed.

San Joaquin County.—The fruit growers of this county, under the direction of their County Board of Horticultural Commissioners, are organizing a thorough warfare to destroy the Codlin Moth, Scale Insects, etc., found in their orchards. (See report marked "E.")

San Mateo County.—It has been reported to me that Codlin Moth has been found in orchards of this county.

Santa Clara County.—The orchards of this county have been more seriously infested by noxious insects (species injurious to fruit trees), namely: *Aspidiotus perniciosus* (San José Scale), *A. rapax*, *A. conchiformis*, *Lecanium oleæ* (Black Scale), Red Spider, and Codlin Moth, than those of any other county of the State. It is stated that the Black Tartarian Cherry Tree is the only variety of deciduous fruit tree that is entirely free from their ravages. In past seasons those pests have caused serious loss financially to the fruit growers of this county. By direction of the County Board of Horticultural Commissioners, a general warfare has been made. Judging the amount of work done and now in progress, and the success attained at the present time, it may be safely predicted that a large majority of the fruit growers of Santa Clara County will enter the markets the coming season with full crops of as choice fruit as can be found in any market in this State. (See report of Commissioners, marked "F.")

Note.—I regret to state that the scale *Acerya purchasi* (White Cottony Cushion Scale) is to be found on many of the ornamental trees at San José and Santa Clara. Every effort should be used for its destruction.

Santa Cruz County.—The orchards of this county are not seriously infested by living species of insect pests. In some instances the scale insects *A. rapax* (Santa Cruz) and *A. conchiformis* (common Apple Scale) are found. The scale insect *A. perniciosus* (San José) has been found in orchards on the Santa Cruz mountains, and in one orchard at Watsonville. (In the latter it has been destroyed by washing the trees with one pound of concentrated lye to one and one half gallons of water.) An apple orchard in the vicinity of Watsonville shows signs of being infested by Woolly Aphis, and some species of caterpillars damage the apples. (See report of Commissioners marked "G.")

Santa Barbara County. In some of the citrus orchards in this county the scale insect *Icerya purchasi* (White Cottony Cushion Scale) has spread to an alarming extent, and should be exterminated regardless of cost. The scale *L. oleæ* (Black Scale) is also found on the citrus trees and deciduous fruit trees. Mr. Ellwood Cooper has effectually destroyed the Black Scale on his premises—an excellent example for the fruit growers of Santa Barbara. A County Board of Horticultural Commissioners has been appointed.

Tulare County.—Codlin Moth and Woolly Aphis are found in the orchards of this county.

Tuolumne County.—Orchards in this county are infested by Codlin Moth.

Ventura County.—On the citrus trees in this county, Black Scale (*L. oleæ*) is found only to a limited extent.

Yolo County.—The Codlin Moth has done serious damage to the apple and pear crops of this county in past seasons, but in orchards that have been cleaned, as Oak Shade, at Davisville, the moth could not thrive. Red Spider has infested the almond orchards to some extent. Scale A. *Perniciosus* (San José), is found in one orchard of 2,000 trees, two years planted—seriously infested. A County Board of Commissioners have been appointed.

YUBA COUNTY.—The Codlin Moth infests the apple and pear orchards of this county. On the citrus tree the scale insect, *A. aurantii* (Red Scale), is found.

At this date, the Supervisors of seventeen counties have appointed County Boards of Horticultural Commissioners and the Supervisors of two counties will probably appoint next month, making nineteen County Boards. There should be County Boards appointed in all the counties named in this report, as abundant proof can be produced that delay in destroying invading insect pests of the orchard is dangerous in any community. I meet fruit growers occasionally who think the orchard pests will disappear as they came, *i. e.*, of their own accord. "The balance of nature is a theory relied upon by some naturalists—that the foes of an invading species will, ere long, check its increase." So far as known in California, noxious insects of the different species named in this report are spreading beyond the power of their natural foes to check them; therefore, for the present protection of orchard property and its productions, a united warfare should be made by all fruit growers owning infested orchards, for the extermination of such insects as are known to be injurious to fruit and fruit trees.

By instructions of the State Board of Horticultural Commissioners, I prepared a treatise—"Insects Injurious to Fruit and Fruit Trees in the State of California"—which was published at the State Printing Office. The first edition of 7,800 copies was distributed, and a second edition of 2,200 copies was issued and distributed, excepting about 400 copies, which will not be sufficient for the demand. The Quarantine Rules and Regulations, approved by your Board, for the protection of the horticultural interests of the State, are as follows:

1. All tree or plant cuttings, grafts or scions, plants or trees of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, that are known to be injurious to fruit or fruit trees, and liable to spread contagion; or any tree or plant cuttings, grafts, scions, plants, or trees of any kind, grown or planted in any county or district within the State of California, in which trees or plants, in orchards, nurseries, or places, are known to be infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, are hereby required to be disinfected before removal for distribution or transportation from any orchard, nursery, or place where said trees or plant, cuttings, grafts or scions, plants, or trees of any kind are grown, or offered for sale or gift, as hereinafter provided.

2. All trees or plant cuttings, grafts or scions, plants, or trees of any kind, imported or brought into this State from any foreign country, or from any of the United States or Territories, are hereby required to be disinfected immediately after their arrival in this State, and before being offered for sale or removed for distribution or transportation, as hereinafter described; provided, that if an examination of any such importations by a local resident Inspector or the Chief Executive Horticultural Officer, a bill of health is certified to by such examining officer, then disinfection will be unnecessary.

3. Fruit of any kind infested by any species of scale insect or scale insects, or the germs thereof, namely, the eggs, larvæ, or pupæ, known to be injurious to fruit and fruit trees, and liable to spread contagion, is hereby required to be disinfected, as hereinafter provided, before removal off the premises where grown, for the purpose of sale, gift, distribution, or transportation.

4. Fruit of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, imported or brought into this State from any foreign country, or from any of the United States or Territories, are hereby prohibited from being offered for sale, gift, distribution, or transportation.

5. Fruit of any kind, infested by the insect known as Codlin Moth, or its larva or pupa, is hereby prohibited from being kept in bulk, or in packages or boxes of any kind, in any orchard, storeroom, salesroom, or place, or being dried for food, or any other purposes, or being removed for sale, gift, distribution, or transportation.

6. Fruit boxes, packages, or baskets, used for shipping fruit to any destination, are hereby required to be disinfected, as hereinafter provided, previous to their being returned to any orchard, storeroom, salesroom, or place to be used for storage, shipping, or any other purpose.

7. Transportable material of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, is hereby prohibited from being offered for sale, gift, distribution, or transportation.

8. Tree or plant cuttings, grafts, scions, plants, or trees of any kind, may be disinfected by dipping in a solution composed of not less than one pound (1℔) of commercial concentrated lye to each and every two (2) gallons of water used as such disinfectant, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

9. Empty fruit boxes, packages, or baskets, may be disinfected by dipping in boiling water, and allowed to remain in said boiling water not less than two minutes; said boiling water used as such disinfectant to contain, in solution, not less than one pound (1℔) of concentrated potash, or three fourths (¾) of one pound (1℔) of concentrated lye, to each and every twenty gallons of water, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

10. Fruit on deciduous and citrus trees infested by any species of scale insect or scale insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, may be disinfected before removal from the tree, or from the premises where grown, by washing or thoroughly spraying said fruit with a solution composed of one pound (1 ℔) of whale oil soap and one fourth of one pound of flour of sulphur to each and every one and one quarter (1¼) gallons of water used as such disinfectant, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

11. Owners of fruit of any kind grown in any orchard, nursery, or place in which trees or plants are known to be infested with any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, and all persons in possession thereof or offering for sale, gift, distribution, or transportation, are hereby required to procure a certificate of disinfection before removal for sale, gift, distribution, or transportation.

12. Any tree or plant cuttings, grafts, scions, plants, or trees of any kind, empty fruit boxes, fruit packages, or fruit baskets, or transferable material of any kind, offered for sale, gift, distribution, or transportation, in violation of the quarantine rules and regulations for the protection of fruit and fruit trees, approved by the Board of State Viticultural Commissioners, may be seized by the Chief Executive Horticultural and Health Officer, or by any of the local resident Inspectors appointed by him; said seizure to be the taking possession thereof, and holding for disinfection, or for an order of condemnation by a Court of competent jurisdiction.

13. Any person violating the above quarantine rules and regulations shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by fine of not less than twenty-five nor more than one hundred dollars.

The foregoing quarantine rules and regulations have been published in two daily newspapers and posted, as required by law. Appointments of local Inspectors will be made as soon as practicable, in all the fruit-growing regions of the State.

It affords me great pleasure to report to your Board that the amount of work already accomplished, and the work now in progress, greatly surpasses my highest expectations. I have no hesitation in saying that the work done this Winter, in addition to what will be accomplished this coming Spring, will produce gratifying results, not only to the fruit growers, but to all persons engaged in industries connected with horticulture.

Mr. President, and Commissioners of the State Board of Viticultural Commissioners, I tender you my sincere thanks for the honor conferred upon me by your Board, by appointing me Chief Executive Horticultural and Health Officer of the State; also, for the uniform courtesies I have received since my connection with your Board. Allow me also to return my sincere thanks to your Secretary, Mr. J. H. Wheeler, for the many kind attentions received from him in my intercourse with this office.

Respectfully submitted.

MATTHEW COOKE,
Chief Executive Horticultural and Health Officer.

SESSIONS

OF THE

BOARD OF STATE VITICULTURAL COMMISSIONERS.

Office of the Board of State Viticultural Commissioners,
111 Leidesdorff Street, San Francisco, July 1, 1881.

The regular semi-annual meeting of the Board was held on July 1st, 1881, at the offices of the Board, 111 Leidesdorff Street. Vice-President Mr. Wetmore presiding in the temporary absence of the President Mr. Haraszthy. Present—Chas. Krug, J. De Barth Shorb, Isaac DeTurk, Charles A. Wetmore, R. B. Blowers, Geo. West, G. G. Blanchard, and J. H. Wheeler, Secretary.

An informal discussion on miscellaneous viticultural topics occupied the morning session.

Mr. West submitted for examination samples of wines and brandies of the vintage of 1880; the most interesting among which were a Zinfandel claret, a white wine of the West's White Prolific variety, a muscat of Frontignan, and new distillations of the White Prolific. All of these were the products of the El Pinal vineyard, near Stockton.

The Frontignan was from the variety known as the Muscat Blanc, which produces the famous wine of Frontignan, near the Mediterranean Sea—or rather did produce them before the destruction of that region by the phylloxera.

The West's White Prolific is a vine so named because its true name is unknown at present, and to prevent confusion.

Mr. Wetmore exhibited grafts of this year upon *Vitis Californica* roots, also young seedlings of *Riparia* and *Californica* from seed sown this year. The grafts illustrated three systems of grafting, viz.: One on a seedling *Californica* raised last year at Berkeley, the graft being a *Matero*; the second being an Orleans Riesling on a section of wild root taken from the hills of Lake County, eight or ten inches long; the third a Grenache, grafted into the side of a small piece of wild root—a test graft, intended to determine whether economy may be practiced in material for root grafting.

These specimens all showed vigorous growth and fully demonstrated to the satisfaction of the Board the value and importance of the wild vine of this State for grafting stock.

Samples of insects developed under glass by the Secretary from germs sent by Ellwood Cooper were examined; also specimens of fungoid disease on foliage, canes, and fruit presented by Mr. J. H. Drummond of Glen Ellen, Sonoma County.

AFTERNOON SESSION.

After recess the meeting was called to order by President Haraszthy, at 1:30 P. M. The subject of gathering viticultural statistics was the first work of the Board. It was moved by Mr. Krug that the commissioner for each viticultural district be authorized to expend of the funds of the Board fifty dollars for the gathering of viticultural statistics, the blanks for the purpose to be made out under the direction of the Executive Committee.

By unanimous vote of the members of the Board it was decided, on motion put by Mr. Blanchard, that reports be published from time to time on subjects relating to viticulture, as prepared by the Committee on Phylloxera, Vine Pests, and Diseases of the Vine; these to be all incorporated in a bound report at the end of the year.

The value of the University to the agriculture of the State was spoken of at some length, following an informal report from the Committee on Conference with the Board of Regents. Attention was called to the important advantages which the University offered to mature minds in matters of scientific research, which it was considered by the Board, without dissent, were of greater practical value to the State than even the elementary instruction of under-graduates. In this connection Mr. Blanchard offered the following resolution, which was unanimously adopted:

> *Resolved,* That it is the sense of this Board that the Agricultural Department of the State University has been ably conducted, and has already been of incalculable benefit to the farmers of the Pacific Coast, and indirectly to all its industries; that its weakness lies only in want of adequate appropriations of money to maintain and conduct its work; and that the agriculturists of the State be urged to accord to the University a cordial and zealous friendship and support.

The Secretary was instructed to transmit a copy of this resolution to the Board of Regents.

On call for reports from special committees Mr. Wetmore submitted his report on the progress in his work as Chief Executive Viticultural Officer, which report was, on motion, decided to be submitted to the press for publication if desired. Mr. Krug reported active work being done about St. Helena in warring against phylloxera with carbon bisulphide, operations having been begun wherever the insect had been discovered by Mr. Morse.

President Haraszthy reported an improved condition of the Orleans vineyard which seemed attributable to an application of bluestone made over a year ago.

Commissioner Blowers reported on a means of destroying grasshoppers which had been adopted by himself and neighbors, and had proved successful, viz.: by hauling over the infested spot pans of tar thinned with petroleum.

The question of the adaptability of certain soils to grapes of different varieties occupied the Commission at some small length. No rules were deduced from experiences given.

The resolutions adopted by the Board of State Horticultural Commissioners, on the day preceding, were concurred in without debate.

The work of President Dwinelle, of the Horticultural Board, regarding a subscription to support an Entomologist was approved, and recommended to the public.

Adjournment followed.

JOHN H. WHEELER, Secretary.

OFFICE OF THE BOARD OF STATE VITICULTURAL COMMISSIONERS,
111 Leidesdorff Street, San Francisco, Nov. 11, 1881.

A special meeting of the Board was held at their offices on November 11th, President Haraszthy presiding. Present: Messrs. Charles Krug, George West, I. DeTurk, Charles A. Wetmore, Matthew Cooke, and the Secretary.

The reading of the minutes of preceding meeting was dispensed with, and the report of the Committee on Phylloxera, Vine Pests, and Diseases of the Vine, recommended at their meeting on November 4th, was presented by Mr. DeTurk, Chairman of the said committee, and on motion of Mr. Krug, adopted.

The Chief Executive Viticultural Officer was authorized to declare and enforce quarantine rules in accordance therewith.

Mr. Cooke, Chief Executive Horticultural Officer, reported on rules and regulations agreed to by the Horticultural Commission, which report was duly approved, and, on motion of Mr. Wetmore, Mr. Cooke was authorized to declare and enforce quarantine rules in accordance therewith.

On motion of Mr. West, the following resolution was adopted:

Resolved, That the thanks of this Commission are hereby tendered to the Secretary of State and the officers of the Consular service of the United States, for their earnest and successful efforts in procuring information for the use of the commission.

The following resolution was offered by Mr. De Turk:

Resolved, That the President, Mr. Haraszthy, be requested to send a written statement to the Commissioner of Agriculture at Washington, to be read at the convention to be held at the National Capitol in January, 1882, relating to the wants of the viticultural industries of this State.

Adopted, and followed by adjournment.

JOHN H. WHEELER, Secretary.

OFFICE OF THE BOARD OF STATE VITICULTURAL COMMISSIONERS,
111 Leidesdorff Street, San Francisco, January 27, 1882.

Meeting called to order at eleven o'clock A. M. President Haraszthy presiding.

Present, Commissioners Haraszthy, Krug, DeTurk, Blowers, West, Wetmore, Chief Executive Horticultural Officer Matthew Cooke, and the Secretary, J. H. Wheeler.

The minutes of the preceding meeting were read and approved.

The President stated that pursuant to instructions from the Commission he had, since the last meeting of the Board, communicated with Congressmen Page and Berry and ex-Senator Sargent, who had kindly signified their willingness to exert their efforts in behalf of California viticulture.

A committee of three, Messrs. Blowers, DeTurk, and West, was appointed to tender the thanks of the Commission to those gentlemen.

The resolution proposed at the last meeting of the Horticultural Commission, concerning quarantine, was read, and the following resolution was offered by Commissioner Blowers, which was adopted:

Resolved, That the Chief Executive Horticultural Officer is and shall be authorized to prepare a classification of the different horticultural sections of the State, with special reference to the degree of health or disease therein prevailing among fruit trees; such classification to serve as a basis for the general and legal application of quarantine rules, varying in effect according to the classes of such sections to be affected thereby; and that he be requested to prepare the same carefully and with due regard to the interests of all parties engaged in horticulture, taking sufficient time to acquire the necessary information for this purpose.

A second communication was read from the Horticultural Commission, requesting the immediate publication of the reports of the several Horticultural Commissioners as already accepted.

Mr. West offered the following resolution, which was carried:

Resolved, That Mr. Cooke, Chief Executive Horticultural and Health Officer, be requested to collate the reports of Horticultural Commissioners, as accepted by the Board of Horticultural Commissioners, and prepare them for publication as early as possible.

The published report of the Chief Executive Viticultural Officer, Mr. Wetmore, for the year 1881, was presented and accepted by the Board.

Mr. Wetmore further reported on having appointed a large number of Inspectors, who were now laboring assiduously throughout the State. In this connection Mr. Krug suggested that the Chief Health Officer inform each Commissioner of the Inspectors appointed in his district.

It was stated by the Chief Executive Officer that a case had been encountered, since the enactment of quarantine laws for the disinfection of imported cuttings, in which the law, if enforced, would prove a hardship without a resulting benefit, inasmuch as the receiving of infected cuttings into a vineyard already infested could do no damage. But according to law it was necessary to disinfect at the point of consignment. Mr. Blowers offered the following resolution, which was carried:

Resolved, That the Chief Executive Viticultural Officer be allowed to use his discretion in changing the place for disinfection whenever a hardship would result without good, and wherever there is no danger.

On call for reports the following Commissioners presented their reports for 1881: Messrs. Haraszthy, Blowers, DeTurk, Cooke, and Wetmore, which were referred to the Chief Executive Officer for publication.

The Chief Executive Viticultural Officer, Mr. C. A. Wetmore, offered the following resignation:

Arpad Haraszthy, Esq., President Board of State Viticultural Commissioners:

DEAR SIR: When I was honored by this Commission by being selected to serve as its Chief Executive Officer, I accepted the same with the distinct understanding that my resignation should be accepted whenever it might appear that any considerable number of vinegrowers of the State were dissatisfied with my administration of the office with which I was intrusted. I do not presume to believe that it is possible for any one to fill a public office without encountering some antagonism, or without making some mistakes; nevertheless I voluntarily made the promise that I would resign my position whenever I found that I could not give entire satisfaction to all reasonable persons interested in the welfare of our viticultural industries, and in good faith I now respectfully tender my resignation as Chief Executive Viticultural and Health Officer, giving as my reasons therefor as follows:

First—The compensation allowed by law is insufficient to enable me to support myself and family and to meet the incidental expenses that are necessarily incurred, without engaging in private business also.

Second—To economize my time, labor, and resources, and to avoid being diverted from the subjects involved in my official duties, I have confined myself to business in connection with the development of our viticultural industries. This has given occasion and opportunity for some worthy gentleman that I know—how many others I do not know—to criticise such occupations. Because I am the Executive Officer of this Commission, your member of the Los Angeles District considers that I have no right to engage in the business of importing grape cuttings or of distributing and supplying those purchased within the State. No formal complaint has been made, and therefore I have had no opportunity to reply, but his objections have been stated so frequently, to many different persons, that I feel compelled to notice them. I have nothing to say in reference to his own occupations while acting as a member of this Commission, because I have no reason to object to them; it is sufficient for me to know that he is not satisfied with what I am doing.

Third—I am informed that certain vinegrowers in the St. Helena District are offended because I have purchased a large number of the most valuable cuttings of grapevines in that vicinity to be supplied to such of my clients as desired to plant them elsewhere, thereby, as they think, materially injuring the St. Helena District. I will not explain how I have selected choice varieties of vines which have heretofore not been appreciated as they deserve, how I purchased them by the usual and ordinary methods, and paid for them; it is sufficient for me to know that some in that section are not pleased with my efforts to improve the character of the new vineyards of the State. How serious the opposition may be I do not know.

Fourth—In Los Angeles County I learn that statements have been set afloat that I am hostile to and injuring the interests of its people. In what manner I am supposed to have injured them I do not know. It is sufficient for me to know that for some reason there is some dissatisfaction there.

Fifth—To continue in this office, which is certainly an unprofitable one so far as my private interests are concerned, without feeling that I have full support and cordial sympathy of all reasonable people who are interested in the work I have to perform, is what I never can consent to do.

Therefore, I respectfully tender my resignation, requesting your acceptance of the same at as early a date as may suit the interests of the Commission, agreeing to perform the duties of my office during such a reasonable period of time as you and the members of the Commission may require for the selection of a suitable successor.

Thanking you for the honor of the trust imposed in me, and assuring the members of the Commission of my hearty good will and intention to continue to serve the State to the best of my ability, so long as I remain on this Commission as simple Commissioner for the State at large.

I remain with great respect,
CHARLES A. WETMORE,
Chief Executive Viticultural Officer.

Following the above came expressions of regret from the Commissioners present, and expressions of approbation at the entire course pursued by Mr. Wetmore, since his election as Chief Executive Officer. In accordance with the feeling of those present, the following resolution, offered by Commissioner DeTurk and seconded by Commissioner Krug, was unanimously adopted:

Resolved, That Mr. Wetmore's resignation as Chief Executive Viticultural Officer be not accepted by this Board; that his services to the viticultural interests of the State have been so eminent, so disinterested, and so extensive, that he cannot be spared; that in the opinion of the members present at this meeting, he has done more to further this industry than any other man in California, and that the Commission only regrets that any one of intelligence and standing in the community should object to any work which could only advance his own interests; that it ignores entirely any cause of complaint, and wishes hereby to endorse Mr. Wetmore's entire action, his devotion to the common cause, and expresses its complete satisfaction with all his official actions.

Mr. Wetmore thanked the Commission for their kind expression in his behalf, but insisted on the office becoming open to other aspirants, asking that he might be allowed to serve without salary until such time as his successor should be appointed. This being impossible Mr. Wetmore was induced to continue in his office until such time as the Commission should be better able to act on his resignation.

The Commission adjourned to the call of the President.

J. H. WHEELER, Secretary.

Office of the Board of State Viticultural Commissioners,
111 Leidesdorff Street, San Francisco, April 19, 1882.

The meeting was called to order at eleven o'clock A. M., President Haraszthy presiding.

Present, Commissioners DeTurk, West, Krug, Wetmore, and Shorb, together with the Chief Executive Horticultural Officer, Matthew Cooke, and the Secretary, J. H. Wheeler. Commissioners Blowers and Rose appeared later.

Reading of minutes of preceding meeting dispensed with.

Under the head of correspondence, the President reported that he had been informed by Representative Page that, in accordance with the request of this Commission at their last meeting, ex-Senator Sargent had addressed the Agricultural Convention, held at Washington, which address was to be printed by the Department.

Mr. Wetmore offered the following resolution, which was, after full discussion, unanimously adopted:

Resolved, That the Committee on Distillation, Counterfeits, and Adulterations be instructed to prepare and transmit to the Senators and Representatives of this State in Congress, an address urging them to use their best efforts to secure the passage of the proposed amendment to the revised statutes, now pending in Congress, as favorably reported by the Committee on Ways and Means, relating to the taxation of imitated and adulterated sparkling and still wines; it being understood that this Commission does not consider that the amount of the tax to be imposed is of vital importance, but that the provisions requiring a stamp to be placed upon such products, indicating to consumers the true character of the goods so taxed, will protect not only the public against imposition, but also subserve the best interests of all producers of pure wine, and tend towards advancement in the production of fine wines, and increase our markets for genuine products.

The Secretary reported to the Board on investigations of the phylloxera made in the last month, which report was by the President referred to the Committee on Phylloxera, Vine Pests, and Diseases of the Vine.

Under the head of unfinished business, the resignation of Charles A. Wetmore as Chief Executive Viticultural and Health Officer, came up before the Board, the same having been presented at the last meeting. Numerous petitions from the viticultural districts of the State were presented, and Mr. Wetmore was induced to withdraw his resignation, for which act he received the thanks of the Commission.

It was moved by Mr. DeTurk, that the Commission indorse the commendable action of the St. Helena vinegrowers in their late discouragement in, and their opposition to, the use of glucose and other adulterations practiced in wine making.

Seconded and carried.

After the above, Mr. Wetmore exhibited a system of grafting, applicable to small seedling vines, one which enables the vinegrower to use and graft seedlings which would otherwise be too small, in which case they are customarily put in the nursery or planted in the field, to be grafted when larger. The new system is by "approach," and consists in shaving off the bark of the seedling plant at some point of the stock, and also the bark from the middle or thereabouts of the cutting of the desired variety. These fresh surfaces are bound together by a vegetable fiber (which will rot off before strangling the plant) and fine clay used to seal the graft instead of wax. The seedling and cutting thus bound together are planted in one hole. During the Summer a union takes place, and before the following Spring the graft cutting is severed from its lower part, being cut off below the point of union. The seedling top is also cut off, leaving the desired single resistant plant. Another advantage arising from this system is that the grafting by approach may be done any time during Winter, and is not crowded on to the vinegrower all at once in Spring.

The following is an extract (translated) from a letter written February twentieth, of this year, to Mr. Wetmore, by Professor G. Foëx, of the National School of Agriculture, at Montpelier, France, being presented as a matter of interest to California wine growers, and read before the Commission:

> The tendency toward the reconstitution of our vineyards by American vines becomes stronger and stronger in the south of France. American cuttings have completely given out in the market for two weeks past, so many having been planted. The *Jacquez* and the *Wild Riparia* still take the lead. The wine of the *Jacquez* sold for seventy-five francs per hectolitre (about fifty-seven cents per gallon), at this place, this year, while the ordinary wines of our vineyards brought only thirty-five francs; and I have seen a crop from *Aramon* grafted on the American stocks, which yielded two hundred and fifty hectolitres per hectare (about 2,700 gallons per acre.) These facts, and a great many others of analogous character, are a great encouragement to our viticulturists.

After the above, the annual reports of Commissioners were presented, with instructions to the Secretary, to procure their publication by the State Printer, at an early date.

Adjournment followed.

JOHN H. WHEELER, Secretary.

INVESTIGATION OF THE PHYLLOXERA.

REPORT BY THE SECRETARY, JOHN H. WHEELER.

To the Board of State Viticultural Commissioners:

Gentlemen: At the request of Mr. Wetmore, Chief Executive Viticultural Officer, Mr. F. W. Morse, formerly employed by this Commission for investigating the extent and ravages of the phylloxera, and myself, visited the diseased vineyards of Sonoma in February, 1882, for the purposes expressed in the following questions and answers:

First—Can the phylloxera be found on the grapevine in Winter? If so, in what form? How does the hibernating insect differ from that of Summer, and what metamorphoses are observable?

Second—Does the hibernating phylloxera change to adapt itself to different soils, locations, and varieties?

Third—Is there any particular part or portion of the vine-root to which the phylloxera commonly resort during the hibernating period?

Fourth—Is the so-called Winter egg, which exists in France, on wood, two years old or over, to be found in California on either the wild or cultivated varieties?

Fifth—Do the phylloxera attack the roots of the *Vitis Californica* or wild vine of California, when the latter exists in its native State?

Sixth—Do the phylloxera attack the roots of the *Vitis Californica* when the latter is under cultivation? and what evidences of resistance are to be found on the *Californica?*

The districts comprised in this investigation belong to Sonoma Valley. First, the vicinity of Sonoma town, then three miles east of the same; finally, up the valley as far as Glen Ellen.

The search was assisted by the use of appropriate glasses and instruments. First, a low-power hand glass, for scanning; second, one of higher power. In cases where these proved insufficient, a large microscope was resorted to, with the power of increasing the surface examined 500,000 times, if necessary.

Throughout the route traversed, infected spots were examined on high and low ground, and on gravelly and clayey soils. Confining our work to phylloxerated spots where the insects had been known to exist during the previous Summer, the vines were chosen without any reference to variety or location, and *on every vine examined the phylloxera were found in abundance.*

In form the insects found were subterranean agamous aptera. They were fully developed pucerons of the average size and shape, differing from the Summer insect only in color and inactivity. They lay close to the exterior of the root bark, though not apparently seeking even the protection of crevices. Ofttimes they were observed in close contact with each other, huddling together, as it were. Owing to the dormancy of the insects and to their dark amber color, they were at first difficult to find, but once their appearance fixed in the mind, once knowing what to expect, it became quite as easy as the search followed in Summer or Autumn.

No old ones or young ones were visible except as indicated by remains. There were, however, to be found the carcasses of old and defunct mothers, broadened, flattened, discolored, and partly decomposed. Some were found covering with their lifeless bodies eggs developed but not yet laid, which might possibly be thus protected by the old hulk and hatch out in the following Spring.

It is interesting to note that, on one root where the dormant insects were found, a demonstration was had of the readiness of the insects to renew their depredations on the approach of warm weather. The specimen was breathed upon and warmed for about two minutes; on returning it to the glass, activity was exhibited, not violent or unusual, but a sluggish movement of the antennæ and legs.

As regards the adaptability of the phylloxera to different soils, varieties, and localities, nothing can be said further than that they everywhere appeared the same; on the high and comparatively dry land they seemed identical with those found three feet under water, and that on land where the water had been standing for some weeks. Those on the surface, rootless too, appeared identical with those on the deep roots.

It has often been suggested and thought that the phylloxera may resort to certain portions of the vine on the approach of Winter, where it can best stand its inclemency; perhaps to the tap-root, perhaps to the small fiberous roots, perhaps to the surface roots as opposed to deep ones. None of these surmises have proved correct. In the cases observed, the hibernating phylloxera had not moved from the spot in which it had issued from the egg; the old dead mother phylloxera, or their remains, were observed, in nearly every case, lying by the side of the live ones, and no portion of the vine seems particulary favored by their presence in Winter. This fact has a decided bearing on the Winter use of insecticides, and proves that even in Winter the ground must be completely saturated with the poison. As a conclusion, the phylloxera are likely to be found on any and all roots of the vine in Winter as well as in Summer.

In searching for the Winter egg, the bark of vines belonging to the *vinifera*, as well as that of the *Californica*, in its native state, was carefully examined, and everything of a suspicious nature preserved and put under glass for development.* The only available means of identifying the Winter egg was from incomplete descriptions observed in text-books, which means was, in a sense, uncertain. With this method, the same, if existing, might still have been overlooked, and although some hours were spent in the careful examination of infected vines in different localities, we are yet unable to positively affirm its absence from our vineyards. There is, however, a happy conclusion deducible, viz.: that this form does not exist in Sonoma Valley in any abundance, either on the *vinifera* or *Californica*, of infected spots.

To ascertain whether the *Californica*, growing wild, is subject to the depredations of the root louse, an examination was made of vines growing on the banks of a stream running through a badly infected vineyard of *vinifera*. About the wild vines the ground was uncultivated, compact, and weedy, but the *Californica* roots exhibited no signs of attack; in fact, there was every appearance of health and vigor.

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*These specimens since placed in a warm atmosphere have none of them hatched anything resembling the agamous aptera or gall-producing insect.

As to the transplanted *Californica*, we have the following: In the Experimental Department of this Commission there were, last year, a number of *Californica* seedlings—flower-pot plants, and accordingly diminutive—planted immediately over the remaining roots of badly infected vines of *Vinifera*, the latter being cut off below ground at a depth sufficient to permit of the young plants being put immediately over them. This trasplanting was done in the Spring of 1881, and the ground was swarming with the greedy insects searching for new roots. The new plants seemed equal to the emergency, starting out early with a vigorous growth. The late frosts disabled and checked them, but recovering from this they again put forth and were found in the fall in an apparently healthy condition. For the purpose of examining the above, one of the seedlings was taken up and carefully cleaned. On many of the roots, of a very profuse system, pucerons were found; and on all of them were the characteristic swellings and nodosities produced by the phylloxera, though scarcely any decay was seen. The roots seemed to have gone on without the usual effects of the poison, pushing right forward and through it as if not bitten. Beyond the swelling, the growth appeared quite as healthy as before it, and the large and healthy system developed certainly proves a remarkable power of resistance. From the general condition of these seedlings as found to-day, having been the subjects of a most unwholesome attack of the insects, having been swarmed upon from every side and after all appearing so well, the inevitable conclusion is that it will stand among the foremost of our resistant stocks.

The specimen taken is preserved in alcohol at the office of the Commission. Another year another of these vines will be examined and placed by the first for comparison, and it is hoped to continue by adding one each year, and thus ascertain accurately the value among resistant vines of the *vitis Californica*.

Of other facts noticed, one of peculiar interest was presented near Glen Ellen, bearing upon the use of lime as an insecticide. About twenty vines out of a large vineyard had been removed, after being nearly destroyed by the phylloxera. About the vacant spot thus formed were vines attacked by the insects, but not yet badly reduced. On the surface of the ground around the stumps of the remaining infected vines, the proprietor had heaped lime from three to five inches deep. This operation had been performed six weeks before the examination I am here detailing, during which time heavy rains had been taking the lime downward in solution on the infected roots. The examination began with rootlets two inches from the surface, on which was heaped the lime, and, suffice it to say, that the phylloxera were found in abundance on the first root taken up.

It was discovered, on digging around the vines of our experimental vineyard, near Sonoma, that where soluble fertilizers had been applied in the Spring of 1880, by making a basin at the foot of the vine and applying the material in solution, a dense system of little rootlets had pushed up to take possession of the artificial nutriment, and had formed a heavy tangle or network for absorption. It is generally known that roots will follow nourishment, but in this case there was a surprising abundance and quick appearance. It demonstrates the necessity of applying fertilizers where the roots are desired. Soluble fertilizers should not be placed between the vines unless thoroughly incorporated in the deep soil; nor should they be put at the surface about the trunk of the vine. If practicable they should be applied by means of a bar or dibble, and placed underneath the vine.

Before closing this report, it may be proper to present a question as bearing on the first conditions noted in the work. Though not universally the case, it was found in the majority of vineyards examined, that the infected spots, and in many cases the only infected spots of the vineyard, were those low places where the water stood at the surface during much of the Winter. These spots were characterized especially by being low, moist, and poorly drained. This, and the fact of the phylloxera being found in a good state of preservation two or three feet under water which had been standing for six weeks, seemed incompatible with the insects' hostility to water and inundation generally. That its existence is not a result of this low, wet, and sour condition of the soil, is proved by the parasite being found at some places in deep, well drained, good soil, and on growing and otherwise healthy vines; and the question remains to be answered: Why does the insect adhere to, and thrive best in, the wet spots? There is certainly one conclusion properly arising from the facts presented, viz.: that good drainage must be had.

Respectfully submitted.

JOHN H. WHEELER,
Secretary Viticultural Commission.

STATE HORTICULTURAL COMMISSION.

FIRST REPORT

OF THE

Board of State Horticultural Commissioners.

OFFICE, - - - 111 LEIDESDORFF STREET,
San Francisco, California.

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1882.

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Phylloxera, Vine Pests, and Diseases of the Vine:
I. DeTurk, George West, Chas. Krug, R. B. Blowers, and Chas. A. Wetmore.

On Conference with Board of Regents of State University:
Arpad Haraszthy, Chas. A. Wetmore, and Charles Krug.

On Instructions for the Office of the Chief Executive Viticultural Officer:
Arpad Haraszthy, Charles Krug, and I. DeTurk.

On Horticulture:
George West, R. B. Blowers, and J. DeBarth Shorb.

On Distillation, Counterfeits, and Adulterations:
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Office of the Board:
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ON THE OCCURRENCES AND RAVAGES OF AND REMEDIES AGAINST INSECT PESTS:

On Citrus Trees	Albert S. White
On Olive Trees	Ellwood Cooper
On Deciduous and Ornamental Trees	S. F. Chapin
On the Codlin Moth	Matthew Cooke and Felix Gillet
On Red Spider, Mites, etc.	W. B. West
On Fruit Packages	W. W. Smith and W. B. West
On Transportation and Quarantine	Matthew Cooke, E. J. Wickson, and C. H. Dwinelle
On Rules and Regulations	Charles H. Dwinelle
On Conference with Shippers and Commission Merchants	M. T. Brewer
On Borers Injurious to Fruit and Fruit Trees	Felix Gillet

Office of the Board:

No. 111 Leidesdorff Street, San Francisco.

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* Vice Charles H. Shinn, resigned October, 1882.

ACTS OF THE LEGISLATURE.

CHAPTER LXII.

An Act for the Promotion of the Viticultural Industries of the State.

[Approved April 15, 1880.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. There shall be appointed by the Governor a Board of State Viticultural Commissioners, to consist of nine members, two to be appointed from the State at large, and one to be appointed from each of the seven viticultural districts, which shall be constituted as follows:

First—The Sonoma District, which shall include the Counties of Sonoma, Marin, Lake, Mendocino, Humboldt, Del Norte, Trinity, and Siskiyou.

Second—The Napa District, which shall include the Counties of Napa, Solano, and Contra Costa.

Third—The San Francisco District, which shall include the City and County of San Francisco, and the Counties of San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey.

Fourth—The Los Angeles District, which shall include the Counties of Los Angeles, Ventura, Santa Barbara, San Luis Obispo, San Bernardino, and San Diego.

Fifth—The Sacramento District, which shall include the Counties of Sacramento, Yolo, Sutter, Colusa, Butte, Tehama, and Shasta.

Sixth—The San Joaquin District, which shall include the Counties of San Joaquin, Stanislaus, Merced, Fresno, Tulare, and Kern.

Seventh—The El Dorado District, which shall include the Counties of El Dorado, Amador, Calaveras, Tuolumne, Mariposa, Placer, Nevada, Yuba, Sierra, Plumas, Lassen, Modoc, Alpine, Mono, and Inyo.

SEC. 2. The Commissioners, excepting the two appointed from the State at large, shall be residents of the districts from which they are appointed, and shall be specially qualified by practical experience and study in connection with the industries dependent upon the culture of the grapevine in this State. They shall each hold office for the term of four years, excepting that, of the nine first appointed, four, to be determined by lot, shall retire at the end of two years, when their successors shall be appointed by the Governor.

SEC. 3. The Board shall elect from among their own number a President, a Vice-President, and a Treasurer, and they shall appoint a Secretary, who shall not be one of their number, and whose salary shall not exceed one hundred dollars per month. And the Board shall determine and fix the amount of bonds that shall be given by the Treasurer and Secretary for the faithful performance of their duties.

SEC. 4. It shall be the duty of the Board to meet semi-annually to consult and to adopt such measures as may best promote the progress of the viticultural industries of the State. It shall be their duty to select and appoint competent and qualified persons to deliver at least one lecture each year in each of the viticultural districts named in section one of this Act, for the purpose of illustrating practical viticultural topics, and imparting instruction in methods of culture, pruning, fertilizing, fermenting, distilling, and rectifying, treating diseases of the vine, raisin drying, etc., for the better instruction of the people interested therein, as the requirements of each district may show to be necessary and important, and to disseminate all such useful knowledge relating to viticulture, by printed documents or correspondence, as may be within their power to do. The Board shall devote special attention to the study of the phylloxera and other diseases of the vine, and shall make such recommendations in their semi-annual reports as they may deem best for the protection of vineyards.

SEC. 5. The Commissioners constituting the Board shall serve without compensation, and shall be allowed only their actual transportation expenses to and from their places of residence when attending the semi-annual meetings of the Board.

SEC. 6. The office of the Board shall be in the City of San Francisco, and shall be kept open to the public, subject to the rules of the Board, every day, excepting legal holidays, and shall be in charge of the Secretary during the absence of the Board.

SEC. 7. It shall be the duty of the Secretary to attend all regular meetings of the Board, and to preserve records of proceedings and correspondence; to collect books, pamphlets, periodicals, and other documents containing valuable information relating to viticulture, and to preserve the same; to collect statistics and other information, showing the actual condition and progress of viticulture in this State and elsewhere; to collect information concerning lands suitable for viticulture, and to impart to the public, upon proper demands being made, information concerning the localities of such lands, prices, cost of cultivation, and means of transportation, provided, that he shall receive no fee for such services; to correspond with agricultural and viticultural societies, colleges, and schools of agriculture, and other persons and bodies, political or private, and disseminate information, printed or otherwise, as he may be directed by the Board of Commissioners, and to prepare, as required by the Board, semi-annual reports for publication.

SEC. 8. And for the further promotion of viticultural interests, it shall be the duty of the Board of Regents of the University of California to provide special instruction, to be given by the Agricultural Department of the University, in the arts and sciences pertaining to viticulture, the theory and practice of fomentation, distillation, and rectification, and the management of cellars, to be illustrated by practical experiments with appropriate apparatus; also, to direct the Professor of Agriculture, or his assistant, to make personal examinations and reports upon the different sections of the State adapted to viticulture; to examine and report upon the woods of the State procurable for cooperage, and the best methods of treating the same; and to make analyses of soils, wines, brandies, and grapes, at the proper request of citizens of the State; also, to prepare a comprehensive analysis of the various wines and spirits produced from grapes, showing their alcoholic strength and other properties. and especially any deleterious adulterations that may be discovered. The Regents shall also cause to be prepared, printed and distributed to the public, quarterly reports of the Professor in charge of this work, relating to experiments undertaken, scientific discoveries, the progress and treatment of the phylloxera, and other diseases of the vine, and such other useful information as may be given for the better instruction of viticulturists.

SEC. 9. The Board of Regents of the University shall be authorized to receive and accept donations of lands suitable for experimental vineyards and stations, and shall submit in their next annual report an economical plan for conducting such vineyards, and for the propagation and distribution of specimens of all known and valuable varieties of grapevines.

SEC. 10. There is hereby appropriated, for the purposes mentioned in this Act, the sum of seven thousand dollars, to be apportioned as follows: For the necessary and contingent expenses of the Board of State Viticultural Commissioners, four thousand dollars, and for the University of California, three thousand dollars; and the State Controller shall draw his warrants upon the State Treasurer in favor of the Treasurers of the said Board of State Viticultural Commissioners, and of the University of California, for the amounts of four thousand and three thousand dollars respectively, as hereby appropriated, upon proper demand being made for the same; *provided*, that the said Board of State Viticultural Commissioners shall, in the month of December, submit to the Governor annual statements, duly verified by the oaths of the President and Treasurer, and attested by the Secretary of said Board, showing in detail the manner in which moneys received from the State have been expended, and also the amount remaining unexpended, together with an estimate of expenses for the ensuing year, beginning on the first day of July next thereafter.

SEC. 11. This Act shall take effect and be in force from and after its passage.

CHAPTER LI.

An Act to define and enlarge the duties and powers of the Board of State Viticultural Commissioners, and to authorize the appointment of certain officers, and to protect the interests of horticulture and viticulture.

[Approved March 4, 1881.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The Board of State Viticultural Commissioners, in addition to the duties and powers provided for by the Act entitled "An Act for the promotion of viticultural industries of the State," approved April 15, 1880, shall, in respect to diseases of grapevines and vine pests, constitute a Board of Health. It shall, in addition to laboratory work, cause practical experiments to be made to determine or demonstrate the utility of known and new remedies against such diseases and pests.

SEC. 2. The Board shall elect of their own number, or appoint from without their number, a competent person to serve as Chief Executive Viticultural Officer, who shall perform also the duties of Viticultural Health Officer, under direction of said Board, and subject to removal from such office at any time by the Board.

SEC. 3. The Viticultural Health Officer shall have power, subject to the approval of the Board, to prevent the spread of vine diseases and vine pests, by declaring and enforcing rules and regulations in the nature of quarantine, to govern the manner of, restrain, or prohibit the importation into the State, and the distribution and disposal within the State, of all vines, vine cuttings, debris of vineyards, empty fruit boxes, or other material on or by which the contagion of vine diseases and germs of vine pests may be introduced into the State, or transported from place to place within the State; to declare and enforce regulations approved by the Board for the disinfection of vines, vine cuttings, vineyard debris, empty fruit boxes, and other suspected material dangerous to vineyards, while in transit, or about to be distributed, or transported into, or within the State; to classify the vineyards and viticultural regions of the State, according to the degree of health, or vine disease prevailing therein, and to change the same as circumstances may require to be done, subjecting each class to such varying rules and relations, respecting the introduction or transportation of vines, vine cuttings, and other material liable to spread contagion of disease among vines, as may, in the opinion of the Board, become necessary and expedient for the preservation of vineyards. Such rules and regulations shall be circulated in printed form by the Board among the vine growers and fruit dealers of the State, shall be published at least thirty days in two daily newspapers of general circulation in the State, not of the same city or county, and shall be posted in a conspicuous place at the county seat of each county affected by their provisions.

SEC. 4. The Viticultural Health Officer may appoint local resident Inspectors in any and all of the viticultural regions of the State, whose duties shall be to report to him concerning the health of grapevines, the progress of vine diseases and pests, and all violations of the rules and regulations of the Board; to certify to the proper disinfection of vines, vine cuttings, empty fruit boxes, and other transportable articles required by the Board to be disinfected before transportation, or while in transit, or after delivery at any point of destination, the methods of disinfection to be determined and approved by the Health Officer and the Board; to seize upon and destroy all vines, vine cuttings, debris of vineyards, empty fruit boxes, and other material liable to spread contagion, which may be found in transit, or delivered after transportation, not certified to as required by the Board; *provided*, that the same may be exempt from such destruction if the cost of disinfection by such Inspector shall be provided for by the owner or agent in charge thereof, as may be prescribed for such cases of negligence, carelessness, or violation of quarantine rules, and to keep a record of all proceedings as such Inspectors; *provided*, that there shall be no compensation for such services of inspection, excepting a fee, not to exceed one dollar for each certificate of disinfection, in case of compliance with quarantine regulations, and not to exceed five dollars for each certificate of disinfection after seizure for non-compliance; *provided, however*, such inspection may be employed at the option of the owners of property requiring disinfection to disinfect the same. All vines, or other articles absolutely prohibited of importation or transportation, may be promptly destroyed by any Inspector discovering the same transported or in transit, in violation of regulations, and the cost of such seizure, together with a fee of ten dollars, shall be paid to such Inspector out of any fine that may be collected from the party or parties guilty of such violation. Willful violation of the quarantine regulations of the Board shall be considered a misdemeanor, and punishable by a fine of not less than twenty-five nor more than one hundred dollars. Whenever required for the convenience of vine or fruit growers, or fruit dealers, a resident Inspector shall be appointed upon petition of any three neighboring vine or fruit growers, or dealers in grapes, to reside in their vicinity, if not already provided for; and there shall be not less than two Inspectors appointed for each county which is subjected to such quarantine regulations, and they shall each be subject to removal at the will of the Viticultural Health Officer, if incompetent, or they fail to perform their duties, or are unreasonably distasteful to vine growers and grape dealers.

SEC. 5. It shall also be the duty of the Chief Executive Viticultural Officer to personally visit, examine, and report upon the several viticultural regions of the State; to prepare documents for publication, as required by the Board, relating to any and all branches of viticultural industry, including treatises for the instruction of the public; to supervise the preparation of reports for publication, and especially report upon the practicability and means of eradicating diseases from vineyards, and to superintend experiments with known and new remedies.

SEC. 6. All printing heretofore ordered by the Board shall be paid for out of the appropriations heretofore made for its use. All printing required hereafter shall be done by the State Printer.

SEC. 7. The salary of the Chief Executive Viticultural Officer shall be fixed by the Board, not to exceed one hundred and fifty dollars per month, for services while engaged as such officer, and his actual traveling expenses shall be allowed, not to exceed five hundred dollars per annum.

SEC. 8. The Board of State Viticultural Commissioners shall also appoint an officer, who shall be especially qualified by practical experience in horticulture for the duties of his office, to perform similar duties respecting the protection of fruit and fruit trees as are provided for in this Act in reference to grapevines, with like powers; and the salary and traveling expenses of such officer shall be fixed by the said Board at the same amounts provided for in the case of the Chief Executive Viticultural Officer; and the said Board shall have power to establish such quarantine rules and regulations as are required for the protection of fruit and fruit trees from the spread of insect pests.

SEC. 9. There is hereby appropriated for the uses of the Board of State Viticultural Commissioners, as set forth in this Act, and in the Act providing for its organization, out of any moneys in the State treasury not otherwise appropriated, the sum of ten thousand dollars for the year commencing July 1, 1881, and ten thousand dollars for the year commencing July 1, 1882; and the State Controller will draw his warrants upon the State Treasurer in favor of the Treasurer of the said Board for the said sums, or any part thereof, when they become available, upon proper demand being made for the same by said Board; *provided*, that no claim shall be paid out of such appropriation until the same shall have been presented to and approved by the State Board of Examiners.

SEC. 10. This Act shall take effect and be in force from and after its passage.

CHAPTER LXXV.

An Act to protect and promote the horticultural interests of the State.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. Whenever a petition is presented to the Board of Supervisors of any county, and signed by five or more persons who are resident freeholders and possessors of an orchard, or both, stating that certain or all orchards, or nurseries, or trees of any variety, are infected with scale bug, codlin moth, or other insects that are destructive to trees, and praying that a commission be appointed by them, whose duty it shall be to supervise their destruction, as hereinafter provided, the Board of Supervisors shall, within twenty days thereafter, select three Commissioners for the county, to be known as a County Board of Horticultural Commissioners. The Board of Supervisors may fill any vacancy that may occur in said Commission by death, resignation, or otherwise, and appoint one Commissioner each year, one month or thereabouts previous to the expiration of the term of office of any member of said Commission. The said Commissioners shall serve for a period of three years from the date of their appointment, except the Commissioners first appointed, one of whom shall serve for one year, one of whom shall serve for two years, and one of whom shall serve for three years, from the date of appointment. The Commissioners first appointed shall themselves decide, by lot, or otherwise, who shall serve for one year, who two years, and who three years, and shall notify the Board of Supervisors of the result of their choice.

Sec. 2. It shall be the duty of the County Board of Horticultural Commissioners in each county, whenever they shall be informed by complaint of any person residing in such county, that an orchard, or nursery, or trees, or any fruit packing house, storeroom, saleroom, or any other place in their jurisdiction, is infested with scale bug, codlin moth, red spider, or other noxious insects liable to spread contagion dangerous to the trees or fruit of complainant, or their eggs or larvæ, injurious to fruit or fruit trees, they shall cause an inspection to be made of the said premises, and, if found infected, they shall notify the owner or owners, or the person or persons in charge or possession of the said trees, or places, as aforesaid, that the same are infected with said insects, or any of them, or their eggs or larvæ, and shall require such person or persons to disinfect the same within a certain time to be specified. If, within such specified time, such disinfection has not been accomplished, the said person or persons shall be required to make application of such treatment for the purpose of destroying them as said Commissioners shall prescribe. Said notices may be served upon the person or persons owning or having charge or possession of such infested trees, or places, or articles, as aforesaid, by any Commissioner, or by any person deputed by the said Commissioners for that purpose, or they may be served in the same manner as a summons in a civil action. If the owner or owners, or the person or persons in charge or possession of any orchard, or nursery, or trees, or places, or articles, infested with said insects, or any of them, or their larvæ or eggs, after having been notified as above to make application of treatment as directed, shall fail, neglect, or refuse so to do, he or they shall be deemed guilty of maintaining a public nuisance, and any such orchards, nurseries, trees, or places, or articles thus infested, shall be adjudged, and the same is hereby declared a public nuisance, and may be proceeded against as such. If found guilty, the Court shall direct the aforesaid County Board of Horticultural Commissioners to abate the nuisance. The expenses thus incurred shall be a lien upon the real property of the defendant.

Sec. 3. Said County Board of Horticultural Commissioners shall have power to divide the county into districts, and to appoint a local Inspector for each of said districts. The duties of such local Inspectors shall be prescribed by said County Board.

Sec. 4. It shall be the duty of said County Board of Commissioners to keep a record of their official doings, and to make a report to the Board of State Viticultural Commissioners on or before the first day of November of each year, who shall incorporate the same in their annual reports.

Sec. 5. It shall be the duty of the Commissioners at large, appointed by the Board of State Viticultural Commissioners for such purpose, to recommend, consult, and act with the County Board of Commissioners, in their respective counties, as to the most efficacious treatment to be adopted for the extermination of the aforesaid insects, or larvæ, or eggs thereof, and to attend to such other duties as may be necessary to accomplish or carry out the full intent and meaning of this Act.

Sec. 6. Each County Commissioner and local Inspector may be paid five dollars for each day actually engaged in the performance of his duties under this Act, payable out of the county treasury of his county; *provided,* that no more shall be paid for such services than shall be determined by resolution of the Board of Supervisors of the county for services actually and necessarily rendered.

Sec. 7. Each of said Commissioners may select one or more persons, without pay, to assist him in the discharge of his duties, as he may deem necessary.

Sec. 8. If any County Board of Commissioners, after having received complaint in writing, as provided for in section two of this Act, shall fail to perform the duties of their office, as required by this Act, they may be removed from office by the Board of Supervisors, and the vacancy thus formed shall be filled in the same manner as provided for in this Act.

Sec. 9. Nothing in this Act shall be construed so as to affect vineyards or their products.

Sec. 10. This Act shall take effect immediately.

QUARANTINE RULES

FOR THE

Protection of the Viticultural and Horticultural Industries of the State.

VITICULTURAL QUARANTINE RULES AND RECOMMENDATIONS.

BOARD OF STATE VITICULTURAL COMMISSIONERS,
OFFICE OF CHIEF EXECUTIVE VITICULTURAL OFFICER,
No. 111 Leidesdorff Street, San Francisco.

To all whom it may concern: Be it known, that I, Charles A. Wetmore, Chief Executive Viticultural and Health Officer of the Board of State Viticultural Commissioners, being duly authorized and instructed by said Board, do declare the following quarantine rules and regulations for the protection of the viticultural industries of this State; and due notice is hereby given, as provided by law, thirty days of publication in two daily newspapers of general circulation, not of the same city or county, in this State, and by posting notices in all counties affected by these rules. All parties concerned therein are required to conform thereto, subject to penalties provided for by law for any infraction or evasion of said rules and regulations:

RULE 1. All cuttings of grapevines made in this State for sale, gift, or distribution outside of the vineyard or vineyards where the same were grown, and intended for new plantations, shall be made solely of the wood of the preceding year's growth; all older wood to be carefully and thoroughly removed before leaving the vineyard where made, and to be immediately destroyed by fire, if removed from such cuttings, wherever seized by any duly authorized Inspector for any invasion or infraction of this rule. The reason for this rule is, that the Winter egg of the phylloxera vastatrix is, according to the best authorities, found only on the old wood.

RULE 2. All cuttings of grapevines, and rooted grapevines, imported from any region or country outside of this State, intended for sale, gift, or distribution for plantation in this State, shall be disinfected at the place of first consignment within this State before being further distributed or planted, the method of disinfection to be at the option of the owner or agent in charge of the said cuttings or vines, according to any one of the following methods, viz.:

First—Dissolve sulpho-carbonate of potash in cold water; proportions, ten pounds of sulpho-carbonate to one hundred gallons of water; immerse cuttings and rooted vines fifteen minutes.

Second—Dissolve Little's soluble phenyle by pouring upon it cold water in the proportion of fifty gallons of water to one gallon of the phenyle; immerse cuttings and rooted vines ten minutes.

Third—Take two parts heavy oil of coal tar, two parts water, and one part carbonate of potash or carbonate of soda; put in a covered vessel and heat gently to boiling point for one hour; replace water lost by evaporation; pour into suitable vessels and agitate violently; dilute with fifty parts of cold water; immerse cuttings and rooted vines ten minutes.

Fourth—Dissolve carbolic acid crystals in water, in proportion to one pound of acid to twenty gallons of water; immerse cuttings and rooted vines ten minutes.

Fifth—Dissolve sulphide of potash in the proportion of one pound to twenty gallons of water; immerse cuttings and rooted vines twenty minutes.

Sixth—Dilute one part of "liver of lime" in twenty parts of water; immerse cuttings and rooted vines ten minutes. [N. B.—To make "liver of lime," take one pound quicklime, one pound sulphur, one gallon water; mix; boil over quick fire to one half of volume; agitate before using; dilute with twenty parts of water to one part of "liver of lime."]

Any other efficacious method may be used, provided due notice is given to this office and the same be approved.

INSPECTORS.

For the convenience and protection of all interested parties throughout the State, there will be appointed local resident Inspectors, as provided for by law, for each section or region where vine growers desire the same, and upon the application of any three such neighboring growers, or parties intending during the coming season to plant vines, such application to be addressed to this office, and to be accompanied, whenever practicable, with nominations of suitable persons for the office of Inspector. The other Inspectors required by law will be appointed by this office.

RECOMMENDATIONS FOR THE FURTHER PROTECTION OF VINEYARDS.

All persons planting new vineyards within the State are advised and strongly urged to consider all roots and cuttings suspected, regardless of origin, and to thoroughly disinfect them, thereby accomplishing the destruction of all possible germs of insect pests upon them, as well as also those of fungoid disease, which are becoming dangerous in all parts of the country.

CERTIFICATES.

For the further convenience of vine growers, certificates shall be issued by any Inspector residing near the vineyard of the applicant, or the person in charge of cuttings or rooted vines, setting forth that the provisions of Rule Two have been complied with, and shall be entitled to charge in each case not exceeding fifty cents for such certificates made out in duplicate, one certificate being sufficient to cover any quantity of cuttings or rooted vines in the possession of the applicant that may be satisfactorily shown to the said Inspector to have been disinfected. Certificates of disinfection shall likewise be given any applicant who desires the same, and who shall satisfactorily show to the Inspector that cuttings and rooted vines, other than such as are required to be disinfected by Rule Two, have been properly disinfected in accordance with the recommendations of this office.

INFECTED WRAPPINGS, ETC.

Rule 3. All packages and the packing materials coming into the State with imported cuttings and vines (referred to in Rule Two) shall be disinfected at the time of disinfecting the contents thereof, by immersing in or washing with any of the solutions named in Rule Two, provided that the strength of the same, in case of mere washing, shall be increased by the reduction of the water in the same to one fourth the relative proportions named. If not disinfected, such packages and packing materials shall be destroyed by fire.

PENALTIES.

All infractions or evasions of these rules will be punishable according to law.

CHARLES A. WETMORE,
Chief Executive Viticultural and Health Officer.

San Francisco, November 16, 1881.

HORTICULTURAL QUARANTINE RULES.

To all whom it may concern: Be it known, that I, Matthew Cooke, Chief Executive Horticultural and Health Officer of the Board of State Viticultural Commissioners, being duly authorized and instructed by said Board, do declare the following quarantine rules and regulations for the protection of the horticultural interests of the State, and due notice thereof is hereby given as provided by law, to wit: thirty days of publication in two daily newspapers of general circulation in the State, and by posting notices in all counties to be affected by these rules. All parties concerned therein are required to conform thereto, subject to penalties provided for by law, for any infraction or evasion of said rules and regulations:

QUARANTINE RULES AND REGULATIONS FOR THE PROTECTION OF FRUIT AND FRUIT TREES

From insect pests, namely, insects injurious to fruit and fruit trees, authorized and approved by the State Board of Viticultural Commissioners of California. In pursuance of an Act entitled "An Act to define and enlarge the duties and powers of the Board of State Viticultural Commissioners, and to authorize the appointment of certain officers, and to protect the interests of Horticulture and Viticulture," approved March 4, 1881, the Chief Executive Horticultural and Health Officer may appoint local resident Inspectors in any and all of the fruit-growing regions of the State, whose duties shall be as provided in section four of an Act entitled "An Act to define and enlarge the duties and powers of the Board of State Viticultural Commissioners, and to authorize the appointment of certain officers, and to protect the interests of Horticulture and Viticulture," provided, that there shall be no compensation for such services of inspection, excepting a fee, not to exceed one dollar for each certificate of disinfection, in case of compliance with quarantine regulations, and not to exceed five dollars for each certificate of disinfection after seizure for non-compliance; provided, however, such inspection may be employed at the option of the owners of property requiring disinfection, to disinfect the same. And, also, said local resident Inspectors will be entitled to such other fees as are provided for in cases of conviction and seizures.

1. All tree or plant cuttings, grafts or scions, plants or trees of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, that are known to be injurious to fruit or fruit trees, and liable to spread contagion; or any tree or plant cuttings, grafts, scions, plants, or trees of any kind, grown or planted in any county or district within the State of California, in which trees or plants, in orchards, nurseries, or places, are known to be infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ,

known to be injurious to fruit or fruit trees, and liable to spread contagion, are hereby required to be disinfected before removal for distribution or transportation from any orchard, nursery, or place where said tree or plant, cuttings, grafts or scions, plants, or trees of any kind are grown, or offered for sale or gift, as hereinafter provided.

2. All tree or plant cuttings, grafts or scions, plants, or trees of any kind, imported or brought into this State from any foreign country, or from any of the United States or Territories, are hereby required to be disinfected immediately after their arrival in this State, and before being offered for sale or removed for distribution or transportation, as hereinafter described; provided, that if on examination of any such importations by a local resident Inspector or the Chief Executive Horticultural Officer, a bill of health is certified to by such examining officer, then disinfection will be unnecessary.

3. Fruit of any kind, infested by any species of scale insect or scale insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit and fruit trees, and liable to spread contagion, is hereby required to be disinfected, as hereinafter provided, before removal off the premises where grown, for the purpose of sale, gift, distribution, or transportation.

4. Fruit of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit and fruit trees, and liable to spread contagion, imported or brought into this State from any foreign country, or from any of the United States or Territories, are hereby prohibited from being offered for sale, gift, distribution, or transportation.

5. Fruit of any kind, infested by the insect known as codling moth, or its larvæ or pupæ, is hereby prohibited from being kept in bulk, or in packages or boxes of any kind, in any orchard, storeroom, salesroom, or place, or being dried for food, or any other purposes, or being removed for sale, gift, distribution, or transportation.

6. Fruit boxes, packages, or baskets used for shipping fruit to any destination, are hereby required to be disinfected, as hereinafter provided, previous to their being returned to any orchard, storeroom, salesroom, or place to be used for storage, shipping, or any other purpose.

7. Transportable material of any kind, infested by any insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, is hereby prohibited from being offered for sale, gift, distribution, or transportation.

8. Tree or plant cuttings, grafts, scions, plants, or trees of any kind, may be disinfected by dipping in a solution composed of not less than one pound (1 ℔) of commercial concentrated lye to each and every two (2) gallons of water used as such disinfectant, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

9. Empty fruit boxes, packages, or baskets, may be disinfected by dipping in boiling water, and allowed to remain in said boiling water not less than two minutes; said boiling water used as such disinfectant to contain, in solution, not less than one pouud (1 ℔) of concentrated potash, or three fourths (¾) of one pound (1 ℔) of concentrated lye, to each and every twenty gallons of water, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

10. Fruit on deciduous and citrus trees infested by any species of scale insect or scale insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, may be disinfected before removal from the tree, or from the premises where grown, by washing or thoroughly spraying said fruit with a solution composed of one pound (1 ℔) of whale oil soap and one fourth of one pound of flour of sulphur to each and every one and one quarter (1¼) gallons of water used as such disinfectant, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

11. Owners of fruit of any kind grown in any orchard, nursery, or place in which trees or plants are known to be infested with an insect or insects, or the germs thereof, namely, their eggs, larvæ, or pupæ, known to be injurious to fruit or fruit trees, and liable to spread contagion, and all persons in possession thereof or offering for sale, gift, distribution, or transportation, are hereby required to procure a certificate of disinfection before removal for sale, gift, distribution, or transportation.

12. Any tree or plant cuttings, grafts, scions, plants, or trees of any kind, empty fruit boxes, fruit packages, or fruit baskets, or transferable material of any kind, offered for sale, gift, distribution, or transportation, in violation of the quarantine rules and regulations for the protection of fruit and fruit trees, approved by the Board of State Viticultural Commissioners, may be seized by the Chief Executive Horticultural and Health Officer, or by any of the local resident Inspectors appointed by him; said seizure to be the taking possession thereof, and holding for disinfection, or for an order of condemnation by a Court of competent jurisdiction.

13. Any person violating the above quarantine rules and regulations shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by fine of not less than twenty-five nor more than one hundred dollars.

MATTHEW COOKE,
Chief Executive Horticultural and Health Officer.

Sacramento, November 12, 1881.

RULES RECOMMENDED

By Matthew Cooke, Chief Executive Horticultural Officer,

For the Protection of Fruit and Fruit Trees from the Ravages of Insects.

Rule 1. It shall be required of every fruit grower, owner of an orchard or orchards, or lands containing fruit trees, or persons in possession of lands on which there are any fruit tree or trees which are infested with codlin moth, its larvæ or pupæ (chrysalids), to destroy said codlin moth, its larvæ, or pupæ, before the first day of March each year, by scraping off all rough bark on said trees, and cleaning all crevices in bark and crotches. The scrapings must be gathered carefully and destroyed by burning or otherwise. (A spread made of old grain sacks, or other cloth material, should be spread on the ground around the body of the tree before scraping.) After scraping, the tree should be washed with an alkaline wash made from a soft soap containing at least nine per cent. of potash. This soap, when made, mixed with twenty-five per cent. of its weight with flour of sulphur. One pound of this mixture to each gallon of water used for washing trees. Instead of this wash, the whale oil soap and sulphur mixture known as codlin moth wash, one pound to each gallon of water; or, a mixture containing not less than one pound of commercial concentrated lye to three gallons of water.[*]

Rule 2. All vegetable and other growth must be cleaned off the ground around trees infested with codlin moth, its larvæ or pupæ, before the fifteenth[†] day of May of each year, and the soil made as smooth as possible, provided that all premises under water at that time may be excepted as to date.

Rule 3. All boxes or packages stored in orchards or adjoining storerooms, sheds, or premises, from one season to another, especially those used for the shipment of apples, pears, and quinces, from orchards known to be infested with codlin moth, etc., or boxes and packages known to have been in contact with such, must be disinfected by dipping in boiling water for at least two minutes, such water to contain in solution not less than one pound of commercial potash or five eighths of a pound of commercial concentrated lye to each twenty-five gallons of water used for such disinfection.

Rule 4. All salerooms, storerooms, and packing-houses where fruit or fruit boxes, or packages used in shipping pears, apples, or quinces, or any other kind of fruit infested with codlin moth, its larvæ or pupæ, or scale bugs (insects), or any noxious insects known to be injurious to fruit or fruit trees, have been used or stored for any purpose, must be thoroughly disinfected as prescribed by the Chief Executive Horticultural Officer, or local Inspector, or County Horticultural Commissioner of district in which the premises are located.

Rule 5. All fruit infested with codlin moth, scale bugs (insects), or any noxious insects known to be injurious to fruit and fruit trees, must be picked off the trees and destroyed by cooking or feeding to hogs, or in any other manner satisfactory to the County Horticultural Commissioner or local Inspecter of the district where such tree or trees bearing such fruit are located.

Rule 6. Before the fifteenth[†] day of May in each year, one or more bands of cloth or paper must be placed around each apple, pear, or quince tree contained or growing in any orchard where such trees or their fruit are known to be infested with codlin moth, its larvæ or pupæ. (Burlap, cut or torn in slips about eight inches wide, preferred.) The band or bands to be fastened around the body of the tree by cord or wire, or in any manner satisfactory to the Horticultural Commissioner or local Inspector of the district where such tree or trees are located.

Rule 7. The bands must be examined every seventh day, and the larvæ or pupæ found therein destroyed.

Rule 8. All fruit trees, plants, or scions (excepting grapevines and cuttings), infested by scale bugs (insects), must be thoroughly disinfected by dipping or otherwise washing in an alkaline mixture containing not less than one pound of commercial concentrated lye to every two gallons of water, or by such wash as may be satisfactory to the Horticultural Commissioner or local Inspector of the district where such trees are located or in store.

Rule 9. Any fruit tree or trees, plants, or scions, in any orchard or in any place, infested by red spider (mite), must be thoroughly washed with an alkaline wash as prescribed in Rule 8, or by such wash as may be satisfactory to the Horticultural Commissioner or local Inspector of the district where such trees are located or in store.

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[*] Where the washes containing sulphur have been used, they have proved an excellent preventive against mildew.

[†] In districts where fruit ripens later than at Sacramento, the dates in Rules Nos. 2 and 6 may be made fifteen days later, viz.: thirtieth day of May.

Rule 10. Empty boxes or packages returned from market, or any place whence shipped, with fruit infested with codlin moth, its larvæ or pupæ, or scale bugs (insects), or any noxious insects known to be injurious to fruit or fruit trees, or known to have been in contact with any boxes or packages containing fruit infested by said insects, must be disinfected by dipping in boiling water as prescribed in Rule 3.

Rule 11. In cases where notice is served to disinfect empty boxes or packages just returned from market or in transit, the time allowed from date of notice shall not be less than one day.

Rule 12. In cases where notice is served to disinfect empty boxes or packages used the previous year, the time allowed from date of notice shall not be less than three days.

Rule 13. In cases where notice is served to destroy fruit on trees infested with codlin moth, its larvæ or pupæ, or any noxious insect or insects known to be injurious to fruit or fruit trees, the time allowed from date of notice shall not be less than six days.

Rule 14. In cases where notice is served to place bands on trees as prescribed in Rule 6, the time allowed from date of notice shall not be less than ten days.

Rule 15. Any tree or trees, plants, or shrubs (grapevines excepted), infested by any species of scale bug (insect), red spider (mite), or any noxious insect or insects liable to spread contagion to fruit or fruit trees, must be disinfected with an alkaline wash as prescribed in Rule 8, or such wash as may be satisfactory to the Chief Horticultural Officer, or local Inspector, or County Horticultural Commissioner of the district where such trees are located.

REPORTS OF C. H. DWINELLE,

PRESIDENT AND COMMISSIONER AT LARGE.

PROTECTIVE MEASURES NEEDED.

[Remarks of C. H. DWINELLE, at the quarterly meeting of the Board September 29, 1881.]

If there was before any doubt as to the need of protection for our horticultural interests against the insect pests which are being imported and disseminated through our State, the experience of the last six months must have removed it. While these visits were comparatively few in number, and the fruit which they injured low priced, the damage done was not considered serious. Now matters are changed. The pests have increased enormously, and at the same time the market price of many kinds of fruit has risen very much. Foreign markets have been secured where our products are highly appreciated, and climatic disasters have fallen upon other producing regions, which have reduced the world's supply of choice fruit. Meanwhile rates of interest have fallen so much on this coast that capitalists are more inclined to loan money in the country, and not a few of them are themselves investing in orchards. From these various causes horticulture has received a great impetus. Methods of culture and desirable varieties are much better understood than formerly; so that it is comparatively easy to secure good crops of profitable fruit. The greatest dangers to the industry are now from insect enemies. It is known that most if not all of these can be mastered by vigilance and industry. The important question now is, who are to be one's neighbors? Will they breed pests for the orchards of the thrifty, or will they have intelligence enough to study the habits of noxious insects, and pluck to fight them? Many who formerly denied the need of a war on insects now advocate it, as they see that the prosperity of the whole neighborhood depends upon it. Education in economic entomology is the first step towards changing an obstructionist to an ally in this movement. The patient and zealous labors of our Executive Officer, Mr. Matthew Cooke, both in the field, and latterly at the State Fair, deserve the highest commendation.

The elements of general entomology should be taught in all of our public schools, and also the life history of our most common injurious and beneficial insects.

Return packages, boxes, and baskets still continue to be most efficient means of disseminating pests. The fruit growers about a common shipping point should combine to establish facilities for disinfecting packages on their return from market, by scalding, or other means. Prizes should be offered for the best and cheapest free packages to go with the fruit. A fifty-pound apple package is particularly needed. Fruit infested with insects should be driven from our markets; and in this matter municipal regulations could be called in as efficient aid.

The tenant system threatens to be a serious obstacle to a high standard in horticulture. This is particularly the case where orchards are let to foreigners having an imperfect knowledge of our language. Orchards should never be let without a stipulation that they are to be kept free from noxious insects, in accordance with existing laws and the interests of the owners.

THE FRUIT INTERESTS.

At the quarterly meeting of the State Board of Horticulture, held June 29, 1882, President Dwinelle made the following report, as Committee on Rules and Regulations:

It seems fitting at this time to look back a few months and see what has been accomplished in the matter of horticultural quarantine against the spread of pests injurious to fruit and fruit trees, and to consider the present state of affairs, and see what is needed in the future. I am happy to say that leading nurserymen have maintained their high standing by adopting willingly the rules commended in regard to disinfection of trees and other plants sold.

San José will soon be noted for the healthy and clean condition of its nurseries, which some time ago had such an unenviable reputation. No one can now plead ignorance of the law, nor of the existence of insect pests. Any one selling infested nursery stock in ignorance is, to say the least, criminally careless. When he does it knowingly, he is a swindler of the worst description, who not only defrauds his customer of his money, but also sows the seeds of destruction in his orchard. Against such men should be brought to bear all of the resources of the law. Even if the Acts of March fourth and eleventh, 1881, be declared unconstitutional, or swept away, there are, fortunately, still statutes under which one can punish those who take his money and in return give that which is worse than valueless. The traffic in infested fruit has also been checked to a notable degree, but there is still too much of it that is exposed for sale which is neither creditable to the grower nor profitable to the consumer. The Board of Health would do well to turn their attention to this matter. Does any one cry out that I am hurting his business by these statements? I reply that it must be a bad business that depends for profits on the sale of trees infested with scale bugs, apples and pears riddled by worms, or plums and currants coated with bark-lice. Any honest man can clear his reputation by inviting an impartial examination of his commodities, and their mode of treatment, by competent and unprejudiced persons of known high character.

IMPORTING PESTS.

For several years I have been warning the public against the importation of new pests from abroad with nursery stock, seeds, or other transportable material. I am pleased to know that this warning, coupled with that of others, has had some effect. Our Chief Horticultural Officer has several times been called upon by consignees or their neighbors to inspect trees arriving from the East. This is well, but such inspection should be made universal. We know of at least one carload of peach trees that were imported from a noted peach-growing region of the Atlantic coast—noted alike for its fine fruit and the insects which prey upon it—which seems to have escaped inspection. It is to be hoped that the importer and his customers may not have an experience similar to that of the Spanish, who are reported to have eluded the quarantine officers in importing vines from France so successfully as to introduce phylloxera in their before favored country. I do know that last Spring I received a letter from a gentleman residing in Wilmington, Delaware, asking how he could fight the curculio in his peach orchards. He stated that his loss in fruit last season, through the ravages of that insect, was $20,000, and that my answer would be of interest to the owners of 3,000,000 peach trees. The curculios infesting fruit might be imported by the dozen, and pass under the eye of any one not trained to look for them, without being perceived. They are small gray beetles, about the size of a grain of wheat, which, if alarmed, simulate death, and are easily mistaken for a bit of dry earth. There is one for the plum, apricot, peach, and nectarine, another for the apple, and so on. I cannot say whether they now exist in this State, but I can assert most emphatically that their general dissemination would be a calamity which, in its pecuniary effects, could be measured by nothing short of millions. I have raised in Western New York as fine crops of apricots and plums as ever grew, while my neighbors hardly knew these fruits, excepting in a worm-eaten state. The labor and expense involved in so doing were, however, such as no California orchardist would voluntarily add to his present burdens.

WORMY PEACHES AND APRICOTS.

Some growers of stone fruits, whose knowledge of insect ravages has been mainly limited to those of the codlin moth, have objected to quarantine on the ground that their fruit needed no protection. All such show their ignorance of their business, and of the myriad of pests which threaten it. They cannot have seen the various scale insects (coccidæ) which not only render those fruits unfit for food, but also kill the trees themselves, root and branch. This Spring I found a small brown speckled larva attacking the young shoots of the apricot at Berkeley. It is about as long as, but more slender than, the larva of the codlin moth, and entering the young shoot near the tip, it hollows it out downward, causing it to wither and turn black. From one of these I bred a dark colored moth, but have not yet determined its species. I am told that the same pest has appeared in the interior, and has done considerable damage, particularly where it has attacked newly budded stocks. On the twenty-fourth of this month (June) I bought a peach in Oakland which contained a larva closely resembling that of the codlin moth. Subsequent investigations among the commission houses of San Francisco showed that the new enemy had made an attack in force. In some lots of peaches the majority contained these worms. Its presence is usually indicated by the brown castings which it throws out from a small hole, which may be next the stem or at any other part of the fruit. In its early stages it is white, with black head and six black feet. Later the body becomes of a smoky hue. It will probably prove to be a close relative to the codlin moth. If it has a second and third generation this season, what are the canners to do for choice late peaches? The cherries and apricots have also been attacked in places by caterpillars, which ruin their market value.

NEED OF CLEAN PACKAGES.

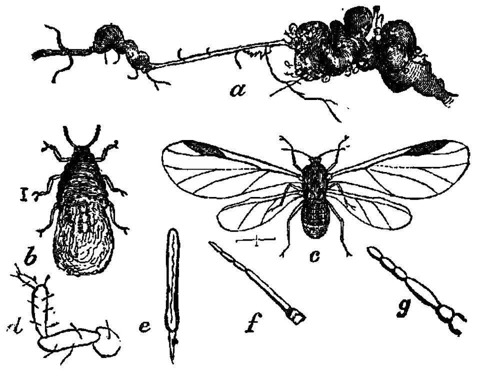
All of these pests are brought to our city markets in greater or less quantities with fruit and its packages. What are we to think of the judgment of orchard owners who wish to have their packages returned from such a pest-house without disinfection? I predict that, in the not distant future, men now opposed to horticultural quarantine will look back with amazement at their present position. Let us hope that it may not then be too late to save their property from destruction. Professor J. Henry Comstock says, in the United States Agricultural Report for 1880, "The system of exchange of fruit boxes which is practiced in some markets, notably in San Francisco, is a very dangerous one * * * and, in any case, when boxes are sent to a market where fruit from infected orchards is received, they should be scalded on their return. This precaution will tend to check the spread of the codlin moth and other pests, as well as scale insects." Professor C. V. Riley gives similar advice as to apple barrels in Missouri.

We are pleased to know that many of our California orchardists have given orders to have all of their packages scalded before leaving San Francisco. They are men noted for their success in horticulture, achieved by intelligent attention to the details of the business. Others have solved the problem by adopting the free box, to go with the fruit. This can now be had at a very low price. Where the canner allows half of the original cost of the package, the actual value of the empty package to the producer is reduced to one or two cents.

In my conversation with orchardists I have found none opposed to the execution of the laws intended for their protection, excepting such as had not yet an adequate knowledge of the danger threatening them. Others, who have felt the scourge, ask that all return of packages be forbidden, and that the importation of fruit and fruit trees from infested regions outside of our borders be absolutely prohibited, or subjected to the strictest quarantine. As to what step must be taken in this latter regard I leave to the suggestion of those who have their money invested in the industry threatened. It is not too much to say that the man who has any interest in fruit production or selling in this State, and yet places obstructions in the way of the execution of laws intended to foster that industry, is his own worse enemy, and a blind leader of the blind.

WOOLLY APHIS ON APPLE AND PEAR TREES.

At the meeting of September 28, 1882, President C. H. Dwinelle made a statement of observation and experiment upon the woolly aphis, to the following effect:



Woolly Aphis of the Apple Tree.

Schizoneura lanigera. Hausman.

a, Infested root; *b*, reddish brown larva with woolly matter on its back; *c*, winged insect, with the woolly matter removed from the body, which is dark brown; *d*, leg of the perfect insect; *e*, beak; *f*, antenna of winged insect; *g*, antenna of larva—all greatly magnified.

Synonymous names:
- *Aphis lanigera.* Hausman.
- *Coccus mali.* Bingley.
- *Eriosoma mali.* (Leach MSS.) Samouelle.
- *Myzoxylus mali.* Blot.
- *Schizoneura lanigera.* Hartig.
- *Pemphigus pyri.* Fitch.
- *Aphis (Schizoneura) lanigera.* Ratz.

Some months ago, at a meeting of the State Horticultural Society, I called attention to the woolly aphis as the most threatening enemy to apple culture on this coast. While the codlin moth thins out the fruit, this aphis stunts or destroys the whole tree. On the limbs it causes unsightly swellings and distortions, checks the growth of wood and fruit, encourages the growth of the leaf fungus (*Fumago salicina*), and makes the tree a foul and disgusting object. Where it attacks the roots, they, too, show excrescences, and eventually become decayed and useless. The similarity of the insect to the phylloxera of the vine suggested to me the search for a resistant stock on which to work apples, and thus render them proof against the pest. In answer to my inquiries, John Lewelling stated that he had found seedlings of the Golden Russet and Rawle's Jennet to be free from the attacks of the woolly aphis, and that in selecting young stocks he found those with deep, straight roots to be better than such as had fibrous roots near the surface. He also commends placing lime and wood ashes about the crown of the tree as a remedy for the aphis. Afterwards John Rock, of San José, presented to the University two trees of a local seedling stock, which, as far as he had observed, was free from woolly aphis. They were planted in an infested orchard, and repeated attempts have been made to colonize them by placing twigs covered with the insects about them in the soil. Thus far none have been observed upon them. If they withstand for another year, we shall think that a very valuable stock has been discovered.

SPRAY FOR TOPS.

In fighting this insect on the tops of trees, admirable results have been obtained in the University orchard by spraying in Summer and early Autumn with a hot decoction of tobacco. One pound of tobacco to one gallon of water is the strength when first made, but from one to three times as much water is added before use. The tobacco used is the refuse stems and sweepings from the San Francisco factories. To secure efficiency the greater strength is preferred.

The liquid is strained, and applied by means of a Merigot force pump and bug spray. The wire gauze is removed from the nozzle, and the diaphragm having the largest opening is used, so as to secure a free passage for the fluid. The nozzle is held within a few inches of the infested limbs, so that the process is more a washing than a spraying one. The leaves are also drenched as far as practicable, both under and upper sides. The temperature of the liquid in the barrel from which it is pumped is maintained as nearly as practicable at 130° Fahrenheit. This is not very difficult to do by adding a pailful hot from the boiler occasionally. This is the same remedy recommended by Ellwood Cooper, of this Board, after using it with success against the black scale of the olive (*Lucanium oleæ.*) Trees that were languishing under myriads of the aphis were vastly improved by the washing. The destruction of the aphis allowed the sap to nourish the apples, and they increased very rapidly in size.

APPLICATIONS FOR THE ROOTS.

We have not as yet had satisfactory results in treating the roots of the infested trees. Gas lime destroyed the insects, but injured the roots badly, where drainage was imperfect. It may prove to be safe on deep, well drained soils, in small quantities—say a shovelful on a circle of six feet in diameter. Experiments should be tried cautiously, and at first on trees of little value. The effect on the insects and trees cannot be judged of until there has been a good deal of rain or irrigation to carry the solvent parts of the gas lime down through the soil. Carbon bisulphide is on trial, and may prove to be the remedy sought when we know just how to apply it.

DANGER AHEAD.

The season's experience has shown a wonderful increase in the pest in its old haunts, and its appearance in new ones. An active campaign against it should be begun at once. The owners of some of the oldest and heretofore most productive apple orchards in the State tell me that, unless a remedy is found, there will be no profit in apple culture in the future. The Chilean Consul says that at one time this pest swept off the wild apple trees in Chili. This season the pest has been observed in Alameda County, on the pear as well as the apple. Further observations as to resistant stocks should be made by those who have opportunity. The winged form of the woolly aphis will appear within the next few weeks, and it is important that as many of them as possible should be destroyed before that time. Infested trees that are not worth fighting for should be destroyed at once; grub them out, with at least two feet of the roots, and burn them. An old stump, with a few suckers about it, would breed enough of it to keep up the stock of the neighborhood. The pest is well established in many of our nurseries, and the greatest care should be exercised to insure the disinfection of trees bought this winter. The roots as well as the tops should be dipped in weak lye—one pound of the commercial article to one gallon of water—or soaked in soapsuds or tobacco decoction, after cutting off and burning all roots that have been injured by the aphis.

REPORT OF W. B. WEST.

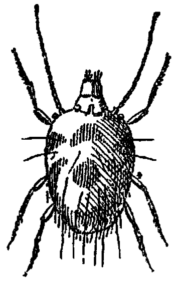
THE RED SPIDER.

STOCKTON, September 20, 1882.

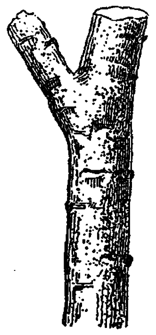
To the Board of State Horticultural Commissioners:

GENTLEMEN: I beg leave to report the following account of my work with the red spider:

Among the most serious insect pests with which the warm and dry portions of our State are affected, is the red spider, or mite. It is probably indigenous, as it is found upon the oaks and willows, and even upon the grass, weeds, and shrubs, along our streams. This insect attacks the leaves of the almond, plum, walnut, chestnut, and gooseberry, and does great damage by checking their growth. Upon the apple and pear its work is not so destructive, and the apricot suffers but little. The damage to nursery trees is considerable. On very dry years, it attacks the fruit tree stocks, rendering budding difficult, also checking the growth of yearling trees. In my experiments upon nursery trees, I have used water syringed upon them, afterwards dusting with sulphur. I have also used the codlin moth wash made of whale oil soap and sulphur successfully. This is for the live insect.



RED SPIDER OR MITE.
(Greatly magnified.)



Branch covered with eggs of Red Spider.

Experiments upon my orchard of 2,000 prune trees, three and four years old, commenced in June of 1881—the trees badly infested with the green aphis and red spider. Used the codlin moth wash as strong as the leaves, then mature, would bear it—one pound to one gallon of water. The experiment was only a partial success, as most of the spiders were on the under side of the leaf and some escaped; although most of the insects were destroyed. The aphides were destroyed, so that I had no further trouble with them. A similar syringing was given later in the season, with about the same results. By the first of August, the leaves showed the effects of the work of the red spider, being quite yellow.

The next experiment was upon the egg. It commenced on the eighth of January, 1882. Used a solution of concentrated ley, one pound to the gallon of water. The experiment, like the previous ones, was not a perfect success. Some of the eggs were destroyed, but a majority of them escaped; a portion of them protected by rough bark, and others fully exposed, were not killed. I find the eggs of the red spider to be very difficult to get rid of. There is trouble in getting a solution of ley to act upon them; they being round, and perhaps covered by some secretion which resists the ley.

Subsequent experiments with different washes, seems to prove that a strong solution of codlin moth wash, to which has been added *tobacco* is the most efficient. It is difficult to give the strength of the solution of tobacco used, as tobacco itself differs so much in strength. This must be determined by experiment.*

On or about May 23, 1882, I found that some of the insects were hatched out and at work upon the leaves. About the middle of June I again applied the codlin moth wash and tobacco, which killed nearly all the insects and many of the eggs, but not all, the solution being much weaker than should be applied in the winter for the egg.

The eggs seemed to be nearly all hatched out by this time, but still I found a supply of the spider, and the leaves showed their ravages, but not nearly as much as they did the year previous.

I found a large number of eggs on the sacks with which the bodies of the trees were wrapped. These should be burned in the fall, also all weeds and trash in the orchard.

Old, and badly infested trees, such as almonds, apple, and pear, should be scraped and the scrapings burned, as the eggs will hatch on the ground just as well as on the trees.

The result of my experiments is, that although my orchard is not entirely free from the insect, it shows a marked improvement, and I would say to those similarly situated, use a solution of whale oil soap and sulphur, to which has been added tobacco. Use this strong in winter, and weaker after the leaves are out. By persistent syringing you will find the enemy to be nearly exterminated and your trees very much benefited.

W. B. WEST,
Commissioner for San Joaquin District.

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* One pound of average tobacco, well boiled in one gallon of water, makes a decoction which can be diluted by an equal measure of water, and will prove fatal to aphides and young scale insects. Probably this strength will be about right for use in connection with the codlin moth wash of whale oil soap and sulphur.—C. H. Dwinelle.

REPORTS OF FELIX GILLET,

COMMISSIONER FOR THE EL DORADO DISTRICT.

HORTICULTURAL INTERESTS.

[Presented at the meeting held June 30, 1881.]

To the President of the Board of State Horticultural Commissioners, San Francisco:

DEAR SIR: Being unable to absent myself from home for the present to attend the meeting of the Board of State Horticultural Commissioners, to be held at San Francisco on the thirtieth of this month, I beg leave to lay before the Board my views on the important questions to be considered at that meeting.

The situation in which the horticultural interests of this State are placed by the ravages of noxious insects is certainly alarming, and justly creating a general uneasiness among those engaged in the various branches of agriculture; for California, which, for years, was relatively free of such pests, has to-day to confront a world of destructive insects, like scale bugs, aphis, borers, codlin moths, worms, flies, mites, phylloxera, etc., and which, as if giving each other the word, are falling upon this "promised land" of ours as a band of ravens on a dead animal, to devour and ruin it. But the alarm has been sounded in time, and to help the ever vigilant agriculturist in his fight against those insect pests, a Horticultural Commission, composed of men known to be foremost in the field of practical pomology, was formed under the auspices of the State, its duty being to advise and suggest, after a careful examination of the situation, what could be done to check if not stop the alarming march of that army of minute but redoubtable and relentless enemies. So rapid, however, has been the spreading of the obnoxious insects all over the country, and so great is the alarm caused by their devastations, that, without waiting for the results of the numerous experiments now in progress throughout the State, a great many people, and at their head the leading papers of San Francisco, are clamoring for the appointment of a State Entomologist, as the best and quickest way of checking the invasion and repelling the insects' attacks.

I do not doubt for a moment that a competent person, with a salary that would enable him to give the subject his whole time, would be highly beneficial to the agricultural and horticultural interests of the State. But to think that nothing short of an entomologist will make the insects go, and that the appointment by the State of such an officer would be the surest way of rescuing this land from the grip of that great pest, is, let me tell you, a mere delusion. To fight successfully those insects, the first thing we have to do, I am well aware, is to acquaint ourselves with their habits. Now, to find out the habits of insects, some of them so minute that a microscope is required to detect them at all, is not a very easy work; it requires a great deal of time, patience, and observation, and with, sometimes, no satisfactory results to reward us for years of research and study. In this way would the entomologist be of great service and value to us, but to leave it altogether into the scientist's hands would be unwise. See what has been going on in some parts of Europe for the last twenty-five years. What have they achieved there, with an army of the best scientists in the world, in fighting out these destructive pests that attacked their orchards and vineyards, and also in dealing against those maladies that devastated their cocooneries? Science, after proving a failure, left the field entirely to the practical men of the land—those who owned the orchards and vineyards, and those who raised silkworms. A State Entomologist, I repeat it, would be a good help in making known the various kinds of insects that prey on the green things of the land, so that we might fight, with a chance of success, all those of whose habits something definite is known. Otherwise a full description by the entomologist of the noxious insects, though it might prove highly interesting, would only satisfy our curiosity concerning our enemies, and, in most cases, amount to nothing else.

Take the twig-boring beetle, for instance, or *Polycaon confertus*, as our State Entomologist, if we had one, would say, and whose ravages are commencing to tell throughout the State. "Where they come from," says a correspondent of the Rural Press, "is a mystery." Still they keep on boring into twigs of olive, almond, chestnut, etc. What does the learned entomologist say about that little beetle? Professor Comstock, of the Department of Agriculture at Washington, to whom specimens of the beetle were sent, says: "So far as I know, its habits have never before been published. The only remedy is to cut the infested twigs, and burn them before the insect escapes." Well, this boring beetle is nothing else but a California production; it is a parasite of the oak, upon which I have traced it myself right in our forests; and I assure you, by what I know of this beetle, that the remedy suggested by Professor Comstock is totally impracticable. If our oak forests were replaced, instead of being made less and less every year, it may be that this *Polycaon confertus* would let alone the various trees of our orchards, and be content to feast upon the native trees.

The simplest remedies are very often the best. At a time when there was no official entomologist, they had their own way of fighting the destructive insects. To get rid of the common cabbage lice, which in certain years were becoming too thick around, they had the little coccinalla, or lady bug, which, both as a perfect insect, or in larva state, accomplishes an incredible consumption of plant lice: to go after the innumerable beetles, snails, spiders, worms, etc., that infested their gardens, and that bred thicker than was desirable, they had the toad, one of the most useful animals to be had in gardens, and which in some countries constitutes an article of commerce, being bought by gardeners to be let loose on their land: insectiverous birds were protected by law; animals, like the land turtle, the hedgehog, and others were, with the toad, made regular members of the garden household, while an immense amount of insect hunting was done by hand. But this is an age of progress; all that has been changed, and in lieu of those primitive modes of fighting garden pests we have entomologists, well versed in insects' anatomy, and infernal drugs, from bisulphide of carbon to cyanide of potassium.

I should think that in a State like ours, composed of intelligent farmers, of practical horticulturists, of men of learning, we could, by uniting those separate forces, get quicker and surer at the root of the evil; find remedies and devise means to do away with the insect pests. The formation of the Viticultural Commission was a step in the right direction, and subsequently the formation of this Horticultural Commission was another step as good and wise as the former. Next, what we want is the formation in every county interested of a local Horticultural Commission, which Commissions would act as so many branches of the Central or State Commissions. This is what Mr. Cooke, Chief Horticultural Officer, has been urging since his appointment, and Mr. Cooke's idea is correct.

The Board of Supervisors of this county will be petitioned at their next meeting, on the fifth of July, for the appointment of a County Horticultural Commission; and it is to be hoped that Mr. Cooke's suggestions will be also heeded in every other county in the State. It is by such means, and by giving cohesion to our separate efforts, that we may be able at last to check successfully, and before the damage done to our orchards, vineyards, and fields, be irreparable, the invasion of the noxious insects.

To recapitulate, I would, as a member of this Advisory Board of Horticulture, advise the appointment of a competent entomologist, to be provided and maintained by the State; the formation in every county in the State of local Horticultural Commissions; and the enlargement of powers of the central organizations. I would also recommend to have the entomologist under the direct control of the State Commissions, and with a salary large enough to enable him to go to any part of the State where his services may be required, and to there study the habits of the destructive insects, and with the local Horticultural Commissioners devise means for destroying or at least checking their devastations.

As to the codlin moth, I will here state that its ravages in this part of the country are quite alarming. As my time has been so far all taken up by the various occupations on my place, I have had yet but few opportunities to study this redoubtable pest, and as I do not wish to speak upon a subject that I have not thoroughly investigated, I will postpone to some future time my report on both the codlin moth and fruit trees borers.

Yours, very respectfully,

FELIX GILLET.

NEVADA CITY, June 25, 1881.

THE CODLIN MOTH.

To the Board of State Horticultural Commissioners:

GENTLEMEN: At the first meeting of the State Advisory Board of Horticulture, held on the fifth of April, 1881, a committee consisting of Messrs. Cooke and Gillet, was appointed to report on the occurrence and ravages of, and on the remedies against the codlin moth. Having been unable to confer with the other member of said committee in regard to a common report, I take the liberty of submitting the following one, independent of any report to be submitted by Mr.

Cooke. In the great fight of man against those minute enemies of fields and orchards, whose ravages on the plants and trees that furnish us with what constitute a larger part of the commodities of life, we have to contend against such forces as:

First—The minuteness of the enemy.

Second—Its facility as winged insects to evade our pursuit, and also to spread in an incredible short time over a large extent of land, thus foiling at every step our attempts at capturing them.

Third—Its immense numbers and its appalling breeding propensities.

No wonder that in this unequal contest of man against those minute animals, the former has to call to his help all his science, all his talent of observation, all his cunning and patience. Then he has to study the habits of the insects, look round for allies, and taking example on nature herself, take from her the very means that she lays within his reach to fight the ravagers' hordes. But let us see how nature proceeds wherever trees and plants are left entirely to her care. There, for instance, springs up a luxuriant growth, so fresh, so green, so inviting as to call forth the ravagers' coming, and sure they will not be long in coming, for caterpillars and bugs of all kinds will soon be at work devouring everything before them; and under such favorable surroundings breeding in immense numbers, so much so that those species of the vegetable kingdom they are feasting upon are doomed and bound to be completely annihilated. But nature, always wide-awake, is watching closely over that destruction, and as she does not mean to have a single species of plants destroyed altogether, she sends forth against the too numerous insects an army of parasites, birds, and insects, large and small, to prey on them, and thus prevent their too fast production, or in other words, keep them within bounds, and at the same time, save the plants from utter destruction. In this way does nature keep up the balance of power between the vegetable and animal divisions of her domain.

Now, how is it with man's productions? Here is a field, there's an orchard—all the work of man. The insects, and their name is legion, are not slow to come round, and everything is so favorable for their over production, that in a very short time they have spread all over the land. What is man going to do?

The presence of insects is hardly noticed at the start; but as their ravages increase, it creates uneasiness, though hardly anything is done towards driving out the invaders from field or orchard; everything is left to nature—a cold or wet winter, it is hoped, will get rid of the pest. But no; the ensuing year the insects are again at work, and in larger numbers yet. This time man is pretty well scared, and he implores nature to do something to save his crops and come to his aid. Well, nature is certainly a good mother that takes as good care of the smallest plant or insect as she does of the largest tree or animal; but it is not nature's mission to defend the productions of man and preserve his fields against the ravages of noxious insects. Nature has nothing to do with those trees and plants raised and cared for by the latter, so that nothing is left to man but to imitate nature, and, getting hold of those insects that prey upon other insects, hurl them against the marauders that infest his land. I have reference to the large family of ichneumonidæ, those minute insects, so small, and yet so capable of rendering to man the greatest services, for, small as they are, by their preying as they do upon the noxious insects of our fields, they in reality keep man from starving. This may be, in fact, regarded as the key to the whole situation.

Foremost among those pests that cause us so much trouble, is the codlin moth, the old *Pyralis pomona* of the French, better known now under the name of *Corpocapsa pomonana*, or *pomonella;* a new comer on this coast. There was none a few years ago, and now it is found all over this State; it is a regular invasion. No matter how large or small is the orchard, not a tree escapes its ravages. Distance is no obstacle to its spreading. It started from the valleys a few days ago, yesterday it reached the foothills, to-day it is right up in the mountains, to-morrow it will be everywhere. So far, the codlin moth has had its own way—almost a clear field before it. The beautiful climate of California has even been an incentive to its already great breeding propensities, and instead of two broods a year as in the Eastern States, it is breeding here continually from April to October. If its ravages are not checked pretty soon, the apple and pear crop of California is in great danger of being annihilated. What is to be done? In view of the steady spreading and ravages of this and other insect pests, Commissions have been formed throughout the State, and under the supervision of the State, whose duties it is to study those pests, devise means toward checking their ravages, and see that the law in regard to their destruction be enforced.

Rules have been adopted by all those Commissions, wherever formed; by those rules the orchardist is requested to make an incessant war on the larvæ and pupæ of this codlin moth or any other insects injurious to fruit or fruit trees; scrape off the loose bark of the trees under which the larvæ find a ready place where to build their little nests; apply a sulpho-alkaline wash upon the body and main branches of the tree; tie bandages around the trees so as to entrap the larvæ hunting for a resting place where to spin their cocoons; disinfect boxes used for packing fruit, and so forth. This is very good, and, if it were done to the letter by every owner of fruit trees, whatever be the number of trees he may own, it is reasonable to expect that it would do much toward lessening the numbers of the enemy and thus preventing still greater destruction in our orchards. But it is very hard to make every one comply with those rules, simple and easy to be applied as they are. There will always be certain people that will neglect what they are requested to do, though those rules are for their and the general public's good. Some will say that they will have enough apples and pears left, anyway; others, that apples are not worth picking, and they don't care; and this and that. And what will the consequences be? That the work done by those of our people who "care" to destroy the larvæ and pupæ of the codlin moth, will have been almost done in vain.

But even if those rules could be strictly enforced wherever there is an apple, pear, or quince tree, I doubt very much whether it could eradicate from the land that pest. Something else has to be done, something more easy of application; it seems to me that our efforts ought to be directed also against the perfect insect, particularly at the opening of spring, when fruit trees are blooming out, and the codlin moth is escaping from its pupal tomb, where it has passed the whole winter, and before it has had time to deposit its eggs in the calyx of the blossom. I admit that there are many obstacles in the way; that we are groping in the dark, so small, so swift, so seldom to be met with is the dreaded little moth. But I maintain that we shall never be masters of the field unless we make a general war against the three forms under which we find the codlin moth, viz.: the larva, pupa, and perfect insect. In fact there are many obscure points to clear up concerning the habits of that moth; and if we want to be successful in driving it out of our orchards, it is of the first importance to ascertain whether it has any parasites, and to what extent, and on what it does feed when a perfect insect, if feeding on anything at all. To fight, capture, or destroy the perfect insect or moth, three ways present themselves, viz.: First, poison; second, light traps; third, ichneumon flies. If the codlin moth feeds on something when in the perfect state, then poison may be resorted to; and as it is a nocturnal moth, light traps may be invented to capture it. (I intend myself to use some kind of traps next spring.) But the simplest and most efficient way of fighting the codlin moth, and all other like pests, and fighting them all round at the same time, without any rules to be enforced, ought to be to pitch against them ichneumon flies. When we consider what immense services those hymenopterous insects do render to agriculture, when in numbers large enough to do any good, it is surprising that those States that have spent already such large sums of money to fight noxious insects, and that have lost still more through their depredations, have never tried to raise ichneumon flies by the million, and let them loose wherever there are any insect pests to destroy. Why, in fact, should not we raise predaceous insects to fight noxious insects? If we want to imitate nature, and it is the best thing we could do, why not do like her and hurl the ichneumonidæ against all those pests?

In three hundred species of ichneumonidæ, we ought to find the very kind that prey on the larvæ and pupæ of the codlin moth. In the perfect state the ichneumonidæ, which are insects of very active habits, are found on flowers or leaves; but in the larval state they live upon and within the larvæ of larger insects. The ichneumonid female may be seen running and flying with agility upon leaves and plants, moving all the time right and left her antennæ or horns, searching between the leaves, in the smallest cracks of the bark, in crotches and crevices, where she expects to find something; and that something is a grub or a pupa into which to thrust one solitary egg. Every species has its own way of depositing its eggs in the body of the grub, destined to feed its little ones; and as soon as a grub is found, the little ichneumon fly will, without hesitating, and quick as lightning, thrust its sting, fine as the finest silk, into the flesh of the unconscious grub, and there deposit one egg. Whether her ovipositor, which is saber-shaped, is short or long, stout or light, curved or straight, the ichneumon goes after her prey, or rather her little one's prey, right under the bark of trees, in the ground, anywhere; she may not see it, but, guided by an admirable instinct, she will deposit that egg, through that ovipositor, on that part of the grub's body, where it has to be laid to permit the young larva to subsist and grow into the flesh of the grub, with the least hindrance; and by the time the grub it has been feeding upon will be ready to accomplish its metamorphosis, the parasite will gnaw into a vital organ, kill the grub, and itself issue, after awhile, from its dead body a perfect insect, to go to work again, without stopping, and accomplish the same series of marvelous metamorphoses.

When we see what a desolation and ruin is caused by insect pests nowadays in wheat, cotton, and other fields—in vineyards, orchards, and forests—I ask again, why shouldn't we take hold of such means as nature has placed within our reach in fighting the noxious insects, and oppose to those bands of ravagers, armies of ichneumonidæ, chalcididæ, and syrphidæ? Why shouldn't we go to work and raise those insects, as we do already coccinellæ, toads, and other predaceous animals—as we do maggots for hens' feeding, and silkworms for the silk they spin? There is no reason why we shouldn't, after finding out what species of ichneumonidæ, chalcididæ, and syrphidæ we would have to oppose to the various species of noxious insects that are presently devastating our fields and orchards; then we could at the proper time hurl armies of those domesticated or civilized insects against the invaders' wild cohorts, and no doubt that victory would be ours. I am well aware that such a result cannot be obtained without very long and tedious efforts; that we would have first to call to our help the entomologist's services; educate our people on the importance of acquiring a certain knowledge of the natural history of insects; call for the aid of the State to establish "stations" where to raise the predaceous insects, and teach the farmer and his sons how to do it themselves. Let me tell you that this question of insect warfare has never been yet properly handled. As well in the old world as in the new it is altogether in its infancy; and here we have to depend mainly on ourselves, so little have we to profit by the experience of all other countries on this vexed insect question, of such vital importance to the agriculturist and horticulturist of California.

In conclusion, therefore, I would suggest to this Board of Horticultural Commissioners, to recommend to the Commission under whose auspices it is acting, the adoption of certain measures necessary to put in operation the suggestions made through this report, viz.:

First—The appointment of an Entomologist to be provided and maintained by the State, and whose duties it would be to act with the Horticultural and Viticultural Commissions of the State in their war against insect pests.

Second—The encouragement by all possible means of the study of entomology, as it would be almost indispensable for our farmers and horticulturists to acquire some knowledge in the natural history of insects, and be able to tell the difference between predaceous and noxious insects—the study of entomology being an easy and very attractive study.

Third—The awarding of premiums by the State and horticultural commissions or societies for the best traps to capture perfect insects.

Fourth—The establishing by the State, and under the supervision of the State Horticultural and Viticultural Commissions and Entomologist, of "stations," where to raise and learn how to raise predaceous insects of the kinds that prey upon the noxious insects that are making such ravages in our orchards, vineyards, and fields.

FELIX GILLET,
Commissioner for the El Dorado District.

Nevada City, September 12th, 1881.

ENEMIES OF THE MULBERRY TREES.

To the President of the Board of Horticultural Commissioners:

Sir: I would beg to call the attention of the Board of Horticultural Commissioners to a statement made at the last meeting of the State Horticultural Society, in regard to scale bugs having been discovered on mulberry trees. The reports of that society's meetings being given a widespread publicity, as it should be, throughout the State, what otherwise had passed almost unnoticed or been treated as a harmless statement, becomes, under the present circumstances, an injury, wantonly or thoughtlessly done, to a growing interest of the State.

It is a well known fact, that no parasites whatever have ever been seen feeding on the leaves of the mulberry tree, with the exception of the *Bombyx mori*, or silkworm; and neither have any insects, so far, been found on the roots or bark of that tree. This immunity from parasites with the mulberry tree is, indeed, very remarkable. There are numerous instances of this kind in Italy and France, when all the trees around the mulberry were infested with insects, while the latter was entirely free from them. But Dr. Gibbons, of Alameda, showed a branch of a mulberry at the last meeting of the Horticultural Society, which was covered with scale bugs; though the learned doctor was unable to tell whether they were of the same kinds as the other kinds so plentiful in Santa Clara and Alameda Counties. We all know that in the beautiful but insect-struck valley of Santa Clara, scale insects have multiplied in such immense numbers, that they are found almost on everything, on all kinds of fruit trees, on eucalyptus, locusts, poplars, rose bushes, live hedges, etc.; and so thick are they in some places, that it is no wonder the few mulberry trees scattered about have, like everything else, fallen a victim to that pest.

But when the mulberry tree is publicly denounced as a "pestiferous" tree, because of some scale bugs being found on its wood in that scale-covered valley, I believe it is nothing but justice to that young industry, silk culture—that may or may not succeed in establishing itself in our midst—to investigate that matter; and, in my judgment, the Board of Horticultural Commissioners is the proper body to ascertain whether the mulberry tree in California is a "pestiferous" tree, unfit to be raised on account of being attacked by scale bugs.

I would, therefore, offer the following resolution:

Whereas, It has been publicly reported that the mulberry in California is a "pestiferous" tree, and unfit to be raised on account of being infested with scale insects; and, whereas, we consider such a report as doing great injustice to a growing industry in this State, silk culture; be it, therefore,

Resolved, That the Chief Executive Horticultural Officer is hereby instructed to investigate the condition of mulberry trees throughout the State, as far as insect pests is concerned, and report at the next meeting of the Board in what counties are scales or any other insects to be found on mulberry trees, and to what class of scales or insects they belong.

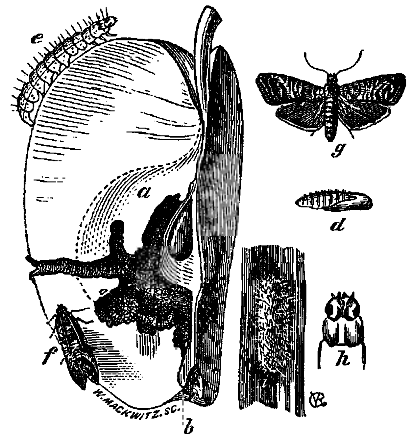
FELIX GILLET.

(See the report of the Chief Executive Officer on this subject, page 50.)

THE CODLIN MOTH.

To the Board of State Horticultural Commissioners:

Gentlemen: As a member of the above committee, now that the campaign against the codlin moth may be considered as over for the season, I deem it proper to lay before you, and for your consideration, this second report on the occurrence and ravages of, and the remedies against, the codlin moth.



Codlin Moth and Apple Worm.

Work of the apple worm or codlin moth and the insect in various stages;* *a*, section of an apple ruined by the burrowings of the larva, and channel by which it leaves when full grown at the left; *b*, the point at which the egg, for the first brood, is usually laid, and at which the young worm enters; *e*, the worm or larva, full grown, with black or brown head, body white when young, cream colored at maturity, and pink just before changing to chrysalis; *h*, head of larva magnified; *i*, *the cocoon which it spins*, usually under a scale of bark; *d*, the chrysalis to which the larva changes in the cocoon, of an amber or chestnut-brown color; *f*, the moth which escapes from the chrysalis, at rest; *g*, the same with wings expanded.

Size of moth: Length, seven sixteenths of an inch; spread of wings, nearly three fourths of an inch. Color of moth: Body, richly bronzed light drab; fore wings, mottled gray and drab, with dark coppery bar across hind margin, or a golden eye spot near inner angle; hind wings, plain drab, a little darker than body. Cocoon: White inside, but usually so covered with minute pieces of surrounding bark, etc., as to be overlooked by a careless observer.

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* After Riley. Cut loaned by civility of Pacific Rural Press.

Thanks to the experience of last year, our County Commission was better prepared this year to meet that dreaded little pest, watch its march and progress, check its ravages, and last, tell how well those remedies recommended for its destruction did their work. We, therefore, came to the conclusion that the best thing proposed yet for entrapping the worms as soon as they leave the fruit, was a band of barley sack, doubled up around the tree, and two inches above the ground, and an old burlap sack, or any old cloth, thrown right into the forks of the tree. Of course, it is understood that the bodies of the trees have been scraped clean during the winter, and all loose bark removed. It is surprising how many worms will lodge themselves under the sack or cloth thrown into the forks of the tree, and under the band near the ground. So much so that I am convinced that in any isolated orchards, the whole of the first brood may thus be captured, and the most of the crop of fruit saved.

Mr. Cooke, in his treatise on noxious insects, recommends to examine the bands every seventh day. Now I do not see the necessity of examining the bands so often, for we must take into consideration the trouble, and even expense, it puts the owner of fruit trees to. Let us simplify, as much as we can, our rules, if we want people to observe them more generally, and do what is recommended towards fighting that pest of our orchards. Every twelfth day will do, and this is obvious from the fact that the moth does not emerge as a perfect insect until the fifteenth day after the larvæ has crept under the band to accomplish its metamorphosis, it taking the worm five days to assume the pupa or chrysalis state, and another ten days to issue a perfect insect from the chrysalis. This is the way I do: The day I examine the bands I put it down on my memorandum book, so as to recollect the date, and the twelfth ensuing day I examine again, and so on to the first or tenth of September, according to the character of the season; but from that time I let the bands stay till after every apple is off the tree, when I examine the bands for a last time, removing all the larvæ found therein. From the first of September no more moths will hatch out as perfect insects, and all the worms found under the bands from that time have already gone into winter quarters.[*]

This year, and in this part of the country, the codlin moth made its first appearance about the fourth of May, and kept on hatching out rather irregularly every day during the whole month; it is very likely that irregularity in hatching as perfect insects that induced some of our horticulturists to put forward the opinion that there were in California three broods, if not four, of the codlin moth during the whole season. Having watched very closely all the movements of the codlin moth around this place, I am positive that it did not go through more than two generations. The second brood of moths hatched out from the twenty-eighth of June on, and it is the worms from that brood that since the twenty-fifth of August have gone and are going into winter quarters. I figured that it took fifty-four days for each brood, or that many days for the moth to develop after the egg from which it originated had been deposited by the female moth on the fruit. I consider it of the first importance to have bands on the trees at the time the worms of this second or last brood are leaving the fruit and in search of a place where to build their winter nest. The bands may stay on from that time for weeks or months without being examined; any time during the winter will do to examine them for the last time and remove all the nests or worms found under the bands.

Thus it is plainly shown how admirably this band system works for entrapping the worms; the only trouble is, that where orchards are close together the work of entrapping the worm is not, as it ought to be, attended to by every one, so as to render it more effectual yet. When examining the bands, I kill with a knife all the worms that I find under them, and put back against the body of the tree the very same side of the cloth with the dead bodies of the worms on. I have found out that it serves as a bait for a voracious minute little ant that gets under the bands, and, after doing away with the dead bodies of the worms, attacks the live ones before they have had time to finish their nests. Everything helps, and though the worms devoured by the ants would have probably been captured when examining again the bands, still I believe that it is well to cultivate in those little ants that taste for the larva of the codlin moth.

Now, in regard to washing the trees with the alkaline wash recommended by your Commission, my opinion is that it ought to be dispensed with. The scraping of the trees and removing of all loose bark during the winter or before the first of April is sufficient to remove all the worms that may have built their nests under the rough bark or in crevices; and the application of a wash, which in ninety-five cases out of a hundred does not get at a single worm, is only putting the orchardist to more trouble and useless expense. When people ask what has to be done towards fighting the codlin moth, and they are told to first scrape their trees, then wash them, and on the fifteenth of May put on bands, which have to be examined every seventh day, they almost invariably say that it is too much work, that it is too complicated, and they finally let the thing go by default. So I say again, let us simplify our rules as much as we reasonably can, if we want to have them more generally observed by owners of fruit trees.*

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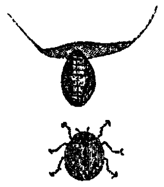
[*] These observations are interesting and valuable for the region in question, but in some portions of the State the insect has been repeatedly observed to change from larvæ to chrysalis and moth in eight days, in others nineteen days. Some orchardists also report the date at which it is safe to neglect the frequent examination of the bands as a month later than that given by Mr. Gillet.

The best results attained this season by the band system have been where they were examined every seventh day. One gentleman thus saved all but one or two per cent of his yellow Newtown pippins, and sold them at a handsome price, while his neighbors lost between fifty and one hundred per cent of theirs.—C. H. DWINELLE.

In my first report to your Commission, I dwelt at length on the importance of finding parasites of the codlin moth, as being the simplest and surest way of fighting that pest and putting a stop to its depredations. In that view, I corresponded with some of the leading entomologists of France, but they didn't know, and in every case they referred me to Prof. Riley, the eminent American entomologist who occupies the chair of entomology at the Department of Agriculture at Washington. It is to say that we have nothing to expect in that line from the old world, with their fine body of "savants;" and we have to rely solely on our own resources and the intelligence and energy of our people. Entomology may be regarded so far as nothing else but a "negative" science, which is of very little help to us, for it is not so much the anatomy or Latin name of the noxious insect that we care for as its habits. To successfully fight all insect pests, the first thing we have to know is their habits and all about their parasites. "Practical" entomology is yet a myth, and it will not be before it has been completely developed that entomology may be called a "positive" science.

Here is a very good illustration of the services rendered to us by some of these parasites or predaceous insects. The cabbage lice, you are all well aware, are very troublesome insects, and which on certain years spread out so fast and thick that it is almost impossible to grow any cabbage heads. This very Summer, these scourges of the king of the cruciferæ, made suddenly their appearance in immense numbers, all over the State. Of course I had my share of them, though I did not care, being prepared for them. I immediately hunted up the little coccinella or lady-bird, which is very common in all gardens; to that effect I took along with me a little steel pen box with a hole big enough to slip in the little beetle. Then, after having captured a certain number of the beetles, I carried them to my cabbage and rutabaga patch, and let them loose among the lice. They literally cleaned them out, no matter how fast the latter multiplied. The lady-bird's larvæ also fed on the lice, and whenever I found any, I carried them to the cabbage patch.



LADY-BIRD.
Dormant pupa and active beetle.

In 1872, when the cabbage lice were a great deal worse than this year, I paid boys fifty cents for a hundred of those lady-birds, through whom I got rid of all the lice that had spread all over the cabbages, after I had tried all kinds of washes, soap suds, ashes, lime, etc. It is a simple and rational remedy, and a cheap one, too. The reason why the lady-birds have to be carried from other parts of the garden to the very spot where cabbages and rutabagas have been planted, is that like all coleoptera, they fly with some difficulty, usually a very small distance at one time; and it might take them the whole Summer before traveling from one end of the garden to the other. The shortest way, for the lice multiply very fast, is therefore to hunt up the lady-bird all over the place and carry it where its services are so much needed.

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* The alkaline wash not only destroys such larvæ as it touches, but also invigorates the tree, and destroys moss and lichens. The bark becomes smooth, and there is much less chance for the larvæ to hide until they come to the traps which are set for them. Many who have tried the alkaline wash commend it highly, aside from its effects on the codlin moth.—C. H. D.

In conclusion, I will say that in regard to the codlin moth, I will be more able another year to tell how successful will have been our present way of fighting that pest. In the meantime, I would respectfully suggest to your Board to simplify your rules when the time will have come to adopt new ones, in the manner recommended in this report.*

FELIX GILLET,
Of Committee on the Codlin Moth.

NEVADA CITY, September 8, 1882.

SULPHO-CARBONATE OF POTASSIUM,

AS A REMEDY AGAINST THE APPLE ROOT LOUSE.

To the Board of State Horticultural Commissioners:

GENTLEMEN: If the codlin moth has to be dreaded for the damage it causes to the apple crop, the root louse may be feared as much for the injury it does to the tree itself. I do not believe that there is an orchard in the whole State that is not more or less infested with that scourge of the vegetable kingdom. In most cases, the trees very badly affected manage to live, but show real signs of decay, that tell on the fruit, which does not grow so large and fine; and after lingering in that condition for some years, dragging along as stunted trees, they finally die, killed by that minute little pest.

Having two apple trees on my place, bearing trees, with roots pretty well infested with root lice, I tried, last Spring, the following experiment: First I dug all around the trees, on a radius of four feet, a hole funnel shaped, carrying away the dirt and whatever of the roots came out with it, the latter so badly affected with lice that they had no shape at all. Then I filled the hole with a solution made of a strong decoction of tobacco stems and sulpho-carbonate of potassium, and filled up with new clean dirt. On the twenty-third of September I examined the roots of those trees, and found them as much infested with lice as they were before I applied the solution. The experiment was a failure.

I had also a little apple stock, one year old, whose roots were covered all up with lice when taken up from the seed-bed; I washed the roots well with cold water, and let the trees soak for twenty-four hours in a light solution of sulpho-carbonate of potassium, and set them out at once. I examined the trees lately, which in the meantime had grown nicely, and didn't find a single root-louse around them.

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* See Rules Recommended, page 12.

I therefore concluded that sulpho-carbonate of potassium was powerless to destroy lice on the roots of large trees, for the reason, probably, that it couldn't reach them, but that it might be used with advantage on young stock. Want of time prevented me from performing, during the Summer, more experiments with sulpho-carbonate of potassium, and to better test its insecticide properties; so that I could not, for the present, either reject or recommend it as a good insecticide.

FELIX GILLET.

NEVADA CITY, September 8, 1882.

REPORTS OF ELLWOOD COOPER,

COMMISSIONER FOR THE STATE AT LARGE.

DISEASES OF THE OLIVE.

ARTICLE No. 1.

To the Board of State Horticultural Commissioners:

GENTLEMEN: I have the honor herewith to submit a partial report on the insect pests that have committed such terrible ravages on the olive; not only in California, but in almost every part of the world where the olive is grown.

The history of the olive is full of interest, as it carries us back to the earliest history of man, and where we find him in his most primitive state or condition, regarding the tree with a value almost sacred; an appreciation that recent generations have not respected, otherwise we would not be called upon to-day to make the struggle in fighting the diseases of which I propose to discuss in this communication. My attention was called as early as 1874 to the condition of the trees in and around Santa Barbara, from the ravages of the *Coccus olio*, commonly known as the black scale,* and which was always followed by the black fungus. In 1875 I visited the mission orchards of San Diego, San Gabriel, San Buenaventura, and Santa Barbara, and in 1876, San Luis Obispo. At the latter place I learned from the mission fathers, through the late Hon. Judge Murray, that the disease had appeared about fourteen years before that date, fixing the date of its appearance in California at about 1862. Prior to that time they had had uninterrupted success with their olive trees. These examinations, very carefully made, determined in my mind one of two alternatives: either to keep the trees free from the scale bug, or root them out. I chose the former, and have been fighting it without any cessation ever since. I believe all my olive trees are clean, and are at this writing loaded with a beautiful fruit crop.

An olive tree once attacked with the scale bug, unless cleaned, will be soon infested so that it cannot bear fruit. Such fruit as is borne during the period of rapid increase of the insect, will not make oil. There are trees enough in the southern part of the State, if properly cleaned and cared for, to produce many thousands of gallons of oil, while, with a few exceptional orchards, I do not believe one single gallon could be made. This is the condition everywhere where the insect is prevalent. The attack is fatal unless it is at once destroyed, and it is useless for any orchardist to fortify himself behind theories that something will turn up to counteract the ravages, or that the ants will destroy them, or that some enemy or parasite will appear to do the work which he cannot escape. The whole business will be bankrupted anything short of total annihilation of the insect. In some districts on the northern coast of the Mediterranean the spread of this insect has become so alarming that the question of abandonment is contemplated. The ravages have baffled the efforts of their wisest men. To give some idea of the rapidity with which it will spread, I quote from a very interesting treatise, a pamphlet of ninety pages, written by Alfred Lejourdan, Agricultural Engineer; published in Marseilles in 1864; title *Maladie Noire*. It is in this work estimated that one female coccus will produce from two thousand to four thousand eggs. By one author that one coccus in five generations will produce *five billions ninety-four millions;* by another that ten generations are produced in one year, and allowing only one hundred as the reproduction of each, we will have at the end of the year from one single female *one billion billions.* Fortunately for us there are too many things contingent that prevent the possibility of such increase—high winds, birds, and insects of various kinds destroy the greater number; still, in favorable years the rapidity with which they will spread will require our greatest energies and intelligence to counteract. In a very exhaustive work on the olive, compiled by A. Coutance, Professor of Natural Science in the School of Medicine, published in Paris in 1877, it is claimed that the silence of authors on this malady caused during a period of twenty years great ravages. Let us not commit the same blunder; and, if we are to foster the culture of the olive in this country, the valuable portions of such works as above mentioned, and of other books on the subject, should be translated into English and made accessible to all the cultivators where the olive can be grown.

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* See Black Scale, *Lecanium oleæ*, in Dr. Chapin's report.

The ravages of this insect are of quite recent date. Lejourdan states that it appeared for the first time at Nice, in 1743, and that Bernard wrote on the subject in 1783; that there were no other writers before that time; that all the Roman authors of the first half of the eighteenth century were silent upon the subject. It was in 1783 that all the proprietors in some localities trimmed down their trees to mere trunks in order to clean them, and commence with new trees. It is certain that a malady, so characteristic with such a disagreeable aspect, could not have escaped the observation of authors. Abbe Conture presented a memoir to the Academy of Marseilles, about the same time that Bernard wrote, in which he declared that the *Coccus olio* was observed for the first time in 1781. Captain Cousin states that in 1861 this malady made terrible havoc in Kabylie (a part of Algeria), where the olive formed almost the only resource of the people. It was the more alarming because they could find no successful remedy.

In Cousin's report, he makes the statement that the greater part of the Kabyles preferred to leave the trees without any effort to remove the insects or the black fungus, and that an orchard attacked would not give fruit before ten years, thus intimating that the disease would die out of itself in about that time. I have found in no other writings any intimation or possibility of the let-alone theory accomplishing the work. Regarding the coccus and the black fungus there are various opinions. Some contend that the black is caused by the humidity and the want of ventilation and sunlight in the tree. This theory is accompanied by the statement that the black fungus is seen without any appearance of the coccus, and that the coccus is to be seen without any appearance of the black fungus; some that it is caused by the smoke from chimneys; others that it is caused by the northern winds, carrying the sea air through the trees; others still that it emanated from the ground. But the principal and accepted theory is that it is caused by the attack of the coccus; the piercing of the bark of the limbs and twigs by these little insects causing the emanation of sap or some substance from the tree or from the insect, or both, which falls on the upper side of the leaves, as also on the trunk and branches, and produces the fungus.

In my examinations and observations I have never seen the black fungus unless preceded by the insect, and that where the tree was affected the black was always on a lower level than where the insect was working, proving conclusively that the black was only a consequence of the insect work. And sometimes where there are comparatively few insects on a tree, it may be several months before there is any appearance of black. When the black fungus completely covers a tree it is quite possible to destroy the insects, and the black will remain for a long time afterwards; in fact when the trunk and limbs or branches are completely coated, it is very difficult to get it off; it becomes a paste and adheres as firmly as glue, and cannot be removed without the application of strong soap or some other substance equally powerful.

It is my opinion that with little care large districts could be kept free from this scale insect. I do not believe they would spread a distance of ten miles, unless carried on plants. Birds will spread them readily a distance of two miles.

In closing this part of the subject I lay down the following facts:

First—That severe frosts will kill the insects, but the number of degrees and limit as to time through which the cold should be extended, and yet not do serious injury to the tree, is beyond my knowledge, for the reason that I have had no opportunity to extend my investigations.

Second—That trees planted close to the sea will resist the attack better than anywhere else. The cold sea winds evidently counteract the spread of the insect.

Third—That high table lands or plateaus will be easier to keep free from the insects than bottom lands, where there is more moisture in the soil, and generally more humidity in the atmosphere.

In my next article, which I hope to have ready for our next regular meeting, I shall treat of the remedies for the prevention, as well as for the extermination of this insect pest.

ELLWOOD COOPER.

SANTA BARBARA, September 29, 1881.

DISEASES OF THE OLIVE—REMEDIES.

ARTICLE No. 2.

To the Board of State Horticultural Commissioners:

GENTLEMEN: In regard to remedies forthe diseases named in my first article, pruning is the most essential thing and the remedy of the greatest vital importance. If trees are properly pruned, so as to admit of free circulation of air and sunlight, more than half the battle is made; in fact, trees in such condition, where the ground is well tilled and kept free from rubbish, arenot so liable to the attack, and if attacked, each scale insect can readly be seen and should be removed without delay. Orchardists whoadopt this plan will have very little trouble even in badly infected districts. A casual examination of several different parts of each orchard should be made as often as once a month—this can be done on horseback or in a light wagon—and in the event of the appearance of scale insects, then a careful examination in that part, and a remedy applied to exterminate them. The insects will be found to inhabit that portion of the tree where the foliage is most dense, where the sunlight is shut out and free circulation prevented. There is not so much in the remedy as in its application. While certain remedies may be effectual in the hands of some, in the hands of othersthey will not be sufficient. "Eternal vigilance is the price of success.' Constant watching and constant fighting is the only sure plan to prevent the spread of insect pests in localities where trees are affected.

There are doubtless very many remedies, that if properly applied would accomplish the work; and the expense would not be so great as to absorb the profits to be derived from the products of well kept orchards. On young olive trees, not bady affected, whale oil soap can be applied with a stiff brush very successfully, and at cheap cost; but on large trees this plan is impracticable. I find in French books, where the subject is treated at great length, numerous remedies advised, which I translate as follows: Scraping off, powdered sulphur, petroleum, boiling water. lime water, hyposulphite of lime, wash with alkaline, smoking with coal tar Also, "proper drainage, the tillage, removing rubbish, the lopping off of every useless twig are necessary precautions; the application is difficult and the success uncertain where there are millions of insects. The pruning is of the greatest importance, and the orchardist who neglects this important part will find that the pests will resist all efforts at extermination."

In my correspondence several years ago with Professor J. E. Planchon, President of the Horticultural Society of Montpelier, France, the following was recommended: "Syringe the trees with a solution of sulphate of soda, and powder them immediately after with powdered lime—a caustic soda is then produced which destroys the insects." Bisulphide of carbon has been used with deadly effect on the most dangerous enemy to citrus fruit that was ever known.

The cost is moderate, and the application not difficult, so that it should attract the attention of fruit growers as an insect destroyer.

The remedies that I have experimented with are whale oil soap, a decoction of tobacco, phenyle, and pyroligneous acid.

First—Whale oil soap, as I have already stated, can be used effectually on small olive trees at very cheap cost.

Second—A decoction of tobacco is simple, inexpensive, and, if properly applied, an effectual remedy for every class of insect pests that I have come in contact with. Forty pounds of good, strong leaf tobacco, thoroughly boiled in water, will make about eighty gallons. This can be thrown upon the trees with a garden syringe,* but it is necessary that the decoction should be kept, while using it, at the uniform temperature of 130 degrees. Hotter than this will destroy the embryo fruit; less hot, less effectual. I would recommend four applications each year, until the orchards are entirely free from insects. Then, if the neighborhood was free, and proper precautions taken, with pruning alone, could be kept free for generations to come. Every orchardist must grow his own tobacco, which he can do in a small way, if he attends to it properly, at a cost of two cents per pound. One acre will produce 4,000 pounds. We have, therefore, allowing two gallons of the decoction to a tree for each application, the following cost: One pound of tobacco, two cents; two men can boil the tobacco and syringe 100 trees daily; $1 25 for each man, and board, would be $2 50, or two and a half cents per tree, which, with the cost of tobacco (two cents), equals per tree four and a half cents; four times each year, eighteen cents. On olive trees producing fifty gallons of berries (valued at four cents to the pound), the whole cost of thorough cleaning would be less than two and a half per cent of each yearly crop. On orange, lemon, and lime trees, about the same.

Third—Phenyle. With this remedy my personal knowledge is limited, but from experiments made by others, I am satisfied it has very valuable properties, and do not hesitate to recommend it. It costs $1 50 per gallon; can be diluted with fifty parts of water to one part of phenyle, making the cost of the dilution for a tree wash only three cents for each gallon.

Fourth—Pyroligneous acid is probably more effectual than any other known remedy, but the present cost of seventy-five cents per gallon makes it too expensive for common use in syringing trees. It is my opinion that it can be manufactured for ten cents per gallon, perhaps less, then diluted one half with water, would make the admixture cost five cents per gallon.

The labor in applying either in swabbing or syringing trees is much less than with tobacco, as it does not require to be heated. The most important properties that any remedy can possess, provided that it has about the same insect destroying power, is that it should not be disagreeable to handle, no unsafety in keeping it in any place, and that it should not require to be heated to be effectual. If it be dangerous in itself, the orchardists will always be in dread; if it require heating to a certain number of degrees, the many little necessary preparations will afford ample excuses for delays, or if it be exceedingly disagreeable to handle, the putting-off plan will always be resorted to, until dire necessity compels its use. This remedy is not disagreeable to handle, and can always be kept at hand and ready for use. It, therefore, recommends itself for universal application. To sum up, it is my conviction, based upon the results of my experiments, that there is no excuse for not keeping olive trees free from scale insects. In fact, it is great economy to do so. It is a source from which to derive an income on the one hand, and total worthlessness on the other. Those who neglect this important duty, either from indifference or the want of knowledge, will expend their money only to see it melt away before them, and will have for their reward unsuccess, discouragement, and despair.

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* See Fountain Pump, figured above.

ELLWOOD COOPER.

Santa Barbara, December, 1881.

SESSIONS OF THE BOARD.

MINUTES OF THE PROCEEDINGS OF THE BOARD OF STATE HORTICULTURAL COMMISSIONERS.

Office of Board of State Horticultural Commissioners,
111 Leidesdorff Street, San Francisco, April 5, 1881.

This being the day appointed by the Board of State Viticultural Commissioners for the organization of an Advisory Board of Horticulture, the meeting was held at 111 Leidesdorff Street, San Francisco.

The appointment of this Board was made to better facilitate the carrying out of Section 8 of "An Act to define and enlarge the duties and powers of the Board of State Viticultural Commissioners, etc.," approved March 4, 1881, which section reads as follows:

> Sec. 8. The Board of State Viticultural Commissioners shall also appoint an officer, who shall be especially qualified by practical experience in horticulture for the duties of his office, to perform similar duties respecting the protection of fruit and fruit trees as are provided for in this Act in reference to grapevines, with like powers; and the salary and traveling expenses of such officer shall be fixed by the said Board at the same amounts provided for in the case of the Chief Executive Viticultural Officer; and the said Board shall have power to establish such quarantine rules and regulations as are required for the protection of fruit and fruit trees from the spread of insect pests.

Pursuant to this section, the Viticultural Board, at their last meeting, held on March twelfth, adopted the following resolution:

> *Resolved,* That before taking any definite action in relation to horticulture, there shall be organized, under the auspices of this Board, an Advisory Board of Horticulture, to consist of eleven members, to be selected and appointed as follows: Each District Commissioner shall nominate one member to represent the horticultural interests of his viticultural district, and each Commissioner for the State at large shall nominate one member for the State at large, and the Executive Committee of the State Horticultural Society shall be invited to nominate two members for the State at large. The members of said Advisory Board of Horticulture shall be selected among citizens of this State especially qualified, by practical experience and study, in horticultural pursuits. The nominations shall be made to the President of this Board, who shall immediately notify the persons selected, and request them to convene in this city, at the office of this Board, on the fifth of April next, for the purpose of permanent organization and consultation. Said Advisory Board shall be requested to coöperate with this Board, and to make such recommendations relating to the horticultural interests of the State, and the appointment of a horticultural officer, as they may think proper. Said Advisory Board shall have the privilege of using the general meeting room at the offices of this Board, when suitable accommodations shall be provided for their meetings, and the Secretary of this Board shall keep a record of their proceedings, and issue all notices of their regular and special meetings, which shall be held at their offices at such times as shall not conflict with the work of this Board, in accordance with the will of said Advisory Board; *provided, however,* that they shall not hold less than four regular quarterly meetings. In case of any vacancy in said Advisory Board, caused by the failure of the Executive Committee of the State Horticultural Society to nominate, within thirty days after being requested to do the same, such vacancy shall be filled by the vote of a majority of the members, nominated by members of this Board.

NOMINATIONS.

The nominations made to the President of the Viticultural Commissioners consist of the following named:

A. Cadwell,* Commissioner for the Sonoma District.
W. W. Smith,† Commissioner for the Napa District.
M. T. Brewer, Commissioner for the Sacramento District.
W. B. West, Commissioner for the San Joaquin District.
Felix Gillet, Commissioner for the El Dorado District.
Albert S. White, Commissioner for the Los Angeles District.
S. F. Chapin,‡ Commissioner for the San Francisco District.
Charles H. Dwinelle, Commissioner for the State at large.
Matthew Cooke, Commissioner for the State at large.
Charles H. Shinn, Commissioner for the State at large.
Ellwood Cooper, Commissioner for the State at large.

These all accepted the nomination, and were appointed by President Haraszthy, of the Viticultural Commission. At this meeting there were present all of the above named and appointed Commissioners, except Mr. Felix Gillet, of El Dorado, Albert S. White, of Los Angeles, and A. Cadwell, of the Sonoma District, who were necessarily detained.

The meeting was called to order by Mr. Haraszthy, of the Board of State Viticultural Commissioners, at eleven o'clock A. M., there being present Messrs. DeTurk, Shorb, Rose, and Wetmore, of the Viticultural Board.

Mr. Haraszthy stated that the object of the meeting was for the organization of a Board to act independently of the Board of State Viticultural Commissioners, in the interest of horticulture; and, reading the resolution offered by Mr. West, of the Viticultural Commissioners, at their meeting held on March 12, 1881, in which the purposes of the Horticultural Commission are more fully defined, stated, on behalf of the Viticultural Commissioners, that they would indorse all legal measures adopted by the Board now about to be formed.

Section five of "An Act to protect and promote the horticultural interests of the State," approved March 14, 1881, was read by the President, and other sections from the same Act referred to.

The meeting was then left to organize and proceed with its business of electing officers, etc. Charles H. Dwinelle, of Berkeley, was elected President, and John H. Wheeler, Secretary pro tem.

The order of business adopted by the Viticultural Board was decided upon as the regular order of business for this Board.

It was moved, seconded, and carried, that six constitute a quorum for meetings of the Board.

The Board then adjourned to one o'clock P. M. of the same day.

At 1 o'clock P. M. the Board assembled, and entered upon the election of a nominee to the Viticultural Board for Chief Executive Horticultural Officer. Communications were received commending for the above nomination the names of Messrs. L. D. Morse, Matthew

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* *Vice* Wm. McPherson Hill, declined.
† *Vice* John Lewellyn, declined.
‡ *Vice* J. P. Pierce, declined.

Cooke (Commissioner), John Britton, Dr. S. F. Chapin (Commissioner), and J. L. Sanford. As a result, the following was the ballot: Mr. Cooke, 6; Dr. Chapin, 1; whereupon Dr. Chapin withdrew his name, and rendered the election unanimous in favor of Mr. Cooke.

Mr. Cooper was appointed as a committee of one to present the name of Mr. Matthew Cooke, of Sacramento, to the Board of Viticulture, as the choice of the Horticultural Board for Chief Executive Horticultural Officer, and to recommend that he be elected and appointed as such.

The work of appointing committees was here entered upon, with the following results:

Committee on the Occurrence and Ravages of and on the Remedies against Insect Pests on Citrus Trees—Albert S. White.

On Olive Trees—Ellwood Cooper.

On Scale Insects of Deciduous and Ornamental Trees—Dr. S. F. Chapin.

On Codlin Moth—Messrs. M. Cooke and Felix Gillet.

On Red Spider, Mites, etc.—Mr. W. B. West.

On Fruit Packages—Messrs. W. W. Smith and Mr. W. B. West.

On Transportation and Quarantine—Messrs. Charles Shinn and M. Cooke.

On Rules and Regulations—President C. H. Dwinelle.

On Conference with Shippers and Commission Merchants—Mr. M. T. Brewer.

On Borers Injurious to Fruit and Fruit Trees—Mr. Felix Gillet.

It was decided that the regular quarterly meetings should be held on the last day of March, June, September, and December. All other meetings to be called by the President, and only at the request of six members of the Board.

Adjournment followed.

JOHN H. WHEELER,
Secretary.

OFFICE OF BOARD OF STATE HORTICULTURAL COMMISSIONERS,
111 Leidesdorff Street, San Francisco, June 30, 1881.

The regular quarterly meeting of the Board of State Horticultural Commissioners was called to order at the rooms of the Board at 10:45 A. M. President C. H. Dwinelle in the chair. Present: W. W. Smith, M. T. Brewer, W. B. West, S. F. Chapin, Matthew Cooke, and C. H. Dwinelle. The minutes of the preceding meeting were read and approved, after correcting to make the regular time for quarterly meetings the Thursday preceding the last Friday of March, June, September, and December. On call for reports of standing committees, Mr. Cooke reported his progress as follows: County Commissioners have been appointed in the following counties: Sacramento, Yolo, Solano, El Dorado, Santa Barbara, Santa Clara, San Joaquin, Contra Costa, Amador, Santa Cruz, and San Bernardino.

The Board of Supervisors—the officers upon whom devolves the appointment of County Commissioners of Horticulture—of the following counties, have promised the appointment of County Commissioners: Placer, Napa, Tuolumne, Los Angeles, Marin, Nevada, and Butte.

A system of quarantine rules and regulations was presented by Mr. Cooke for adoption, which, after some discussion, was laid over for future consideration.

At 12:15 P. M. a recess was declared by the President, allowing one hour for noon.

AFTERNOON SESSION.

At 1:15 P. M. Commissioner A. Cadwell, of the Sonoma District, was added to the list of Commissioners present.

Communications from F. Gillet, Commissioner for the El Dorado District, and from Ellwood Cooper, of Santa Barbara, Commissioner for the State at large, were read. Mr. Gillet made reference to the extensive work to be performed by the Commission; of the commendable action taken by Mr. Cooke; of the necessity of a State Entomologist, etc.; closing with a promise, at the next regular meeting in September, to render his report on codlin moths and insects injurious to fruit and fruit trees. Mr. Gillet also excused his absence.

Mr. Cooper stated his inability to be present at the meeting, and promised his report on the insects infesting olive trees at the next regular meeting, viz., in September.

The following resolution was offered by Mr. Dwinelle for consideration by the Board, after which it was unanimously adopted:

In view of the rapid spread of noxious insects injurious to fruit and fruit trees, the State Board of Horticulture most earnestly calls the attention of fruit growers to the following matters:

"Too great care cannot be used in procuring tree cuttings or scions, whether from foreign countries or local nurseries, to be sure that they are free from scale insects, borers, or other like pests. All empty fruit packages should be thoroughly disinfected on their return from the market to the farm, in order to destroy insects or their germs. To accomplish these desirable results, the rules for the protection of fruit and fruit trees from the ravages of insects, as prepared by Mr. M. Cooke, Chief Executive Horticultural Officer, are especially commended. Copies of these rules can be obtained by addressing Mr. Cooke, at Sacramento, or on application to members of the County Boards of Horticultural Commissioners. Active steps should be taken to secure the appointment of County Boards, where not already made, as, in general, in coöperation lies our only hopes of preserving our valuable horticultural interests from the many threatened dangers."

PRACTICAL ENTOMOLOGY.

Following this came a discussion on the feasibility of informing the public on practical entomology and the principal remedies against obnoxious insects, by means of a pamphlet or descriptive treatise. As a result, the following resolution was adopted:

Resolved, That the Chief Executive Horticultural Officer be requested to prepare for publication, in pamphlet form, a brief popular treatise on the more prominent insects injurious to fruit and fruit trees, giving a description of their appearance, life-history, and the best means of their destruction.

It was decided to request, through Mr. Cooke, the State Board of Agriculture to make proper provision at the next State Fair for the prominent exhibition of the pests destructive of fruit and fruit trees, the same to be under the supervision of the Chief Horticultural Officer, Mr. Cooke.

To further the quarantine work in the State, it was resolved that the Chief Executive Horticultural Officer be authorized to appoint local resident Inspectors in any part of the State where needed.

Again, work was begun for the obtaining of an entomologist on this coast—one to consult as well as instruct. Mr. Cooke thought the most feasible plan for securing immediate results was that which had been proposed by President Dwinelle, viz.: to educate a young man at the University of California for entomological work. President Dwinelle explained that the entomological correspondence addressed to him at the College of Agriculture had assumed such proportions that it was impossible for him to find time to attend to it properly. He had offered to hire some one of the students to give a portion of his time as entomological assistant, and to direct and supervise his work, on condition that the horticulturists would furnish the needed funds. His estimate was for about $600, to make the experiment for a year, including needed apparatus, books, etc. Nearly one half of that sum was already subscribed, and he hoped that the rest would soon be pledged. A valuable foundation might then be laid for the needed collection of insects, with notes upon their history, and the best means of destroying them.

JOHN H. WHEELER,
Secretary.

OFFICE OF BOARD OF STATE HORTICULTURAL COMMISSIONERS,
111 Leidesdorff Street, San Francisco, September 29, 1881.

The regular quarterly meeting of the Board of State Horticultural Commissioners was held at the office of the Board on September 29, 1881, President Chas. H. Dwinelle in the chair. Present—Felix Gillet, S. F. Chapin, Matthew Cooke, Thomas H. Shinn, Chas. H. Dwinelle, Ellwood Cooper, and John H. Wheeler, Secretary.

The society passed at once, after the reading of the minutes, to the consideration of quarantine laws, it being the request of fruit growers from many counties that immediate action be taken and rules adopted which would enable them in their several counties to protect their orchards and fruit interests by proper disinfection, especially with regard to the coming season, for planting and receiving from nurseries.

Quarantine rules for the protection of horticultural industries of the State, which had been laid over at the last meeting of the Board, were read, discussed, altered, and adopted by sections, and the whole was approved, to be presented to the Board of State Viticultural Commissioners at their next meeting.

The above mentioned rules were unanimously agreed upon by the Commission to be presented for adoption to the Board of State Viticultural Commissioners.

Messrs. Cooke and Chapin were appointed as a committee to present these rules to the Attorney-General, and to make such alterations in the remedies mentioned for disinfecting purposes as the said State officer, by his experience and knowledge, might deem advisable.

To obtain concerted action in the carrying out of these rules and to insure the coöperation of fruit growers throughout the State, it was agreed, on the suggestion of Mr. Cooke, that a convention of horticulturists from all parts of the State be called by the Board.

The following resolution was adopted:

> *Resolved*, That the Chief Executive Horticultural Officer be authorized to call a general meeting of the horticulturists of California, to consider their interests in the matter of destroying insects injurious to fruit and fruit trees; the said meeting to be held at some convenient place in San Francisco, early in the month of December next. The above officer shall confer with the representatives of the leading transportation lines, with a view to securing reduced rates of fare to those horticulturists attending the above meeting.

At this convention there will also be displayed apparatus for disinfecting, washes, insecticides, and free packages for fruits. (By "free package" is meant one to go with the fruit when sold.)

At the afternoon session, on call for reports of standing commitees, Mr. Cooper, of Santa Barbara, offered his report on the olive and insects injurious thereto, and Mr. Gillet presented a report on the codlin moth, with proposed remedies. Both of these reports were accepted, and ordered placed on file.

Some remarks on the work of this Commission were made by President Dwinelle, after which the following resolution, presented by Mr. Gillet, was unanimously adopted:

> Owing to the failure of certain counties in appointing Horticultural Commissioners, after having been petitioned as required by law, and such action being injurious to the horticultural interests of the State at large, for the reason that the transgression of this law will lead to great injury, owing to the fact that these counties being doubtless afflicted with insects injurious to fruit and fruit trees might cause much deception to the public and to those who are engaged in the planting or contemplating to plant orchards in counties thus afflicted, we therefore deem it highly essential that this Board, which is formed for the protection of our horticultural interests, shall prevent such action by these counties; and that it is the duty of its members to take such steps as will frustrate any deception sure to be practiced if not immediately stopped. And we do think it is but right and our duty to acquaint the public of the ravages done by insect pests in any portion of the State, regardless of the injury that may affect the interests of the county where noxious insects may exist. Be it, therefore,
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> *Resolved*, That the Chief Executive Horticultural Officer be instructed to make out a list of every county in the State where the codlin moth has made its appearance, and also to make out a list of all counties where scales and other insects injurious to fruit and fruit trees have so far made their appearance, and to report to this Board the extent and nature of the damages done by such insects.

Some interesting specimens of insects infecting chestnut trees in Nevada City, the same inhabiting the oak tree, were exhibited by Mr. Gillet, and adjournment followed.

Approved June 29, 1882.

JOHN H. WHEELER,
Secretary.

OFFICE OF MATTHEW COOKE,
SACRAMENTO, December 8, 1881.

The regular quarterly meeting of the Board of State Horticultural Commissioners was called to order at 9:15 A. M., President Dwinelle in the chair.

Present—Commissioners Dwinelle, Brewer, West, Gillet, White, Chapin, Cooke, and the Secretary, J. H. Wheeler.

Absent—Commissioners Smith, Cadwell, Cooper, and Shinn.

The reading of the minutes of the previous meeting was dispensed with and reports of standing committees were taken up.

Mr. Gillet, of Nevada, of Committee on Borers Injurious to Fruit and Fruit Trees, requested further time, stating that he had at present under consideration a certain borer which he has as yet been unable to identify, which is a habitant of the chestnut trees and indigenous to the oak.

Albert S. White, of Riverside, as representing Los Angeles District, requested of the Board to exercise their utmost power to absolutely prohibit the importation of infected trees into all of that part of his district which is at present free from noxious insects of any considerable importance.

In consideration of this request the following resolution was moved by Dr. S. F. Chapin:

Resolved, That the Board of State Horticultural Commissioners recommends to the Board of State Viticultural Commissioners the adoption of a quarantine resolution prohibiting, whenever it shall be necessary, the transportation from one place to another within this State, or from abroad into this State, of any trees, cuttings, fruit, or other transportable material infested with any insect or insects, or the germs thereof, viz.: their eggs, larvæ, or pupæ, when it shall in the judgment of the Chief Executive Horticultural Officer be required for the protection of non-infected localities or places.

Dr. Chapin's resolution was seconded and unanimously adopted.

Mr. Cooper's communication was read, being an expression of regret at not being able to be present. Mr. Cooper's report was read and adopted for publication.

Mr. West reports that although the plan of his report has been mapped out, it is not now prepared for the Commission. He was requested to write it out for publication.

The Committee on Rules and Regulations reported that success has followed them thus far in their work of establishing and enforcing quarantine laws.

Mr. Cooke reported what work had been done under the quarantine laws.

On call of the Committee on Fruit Packages, etc., Mr. Brewer reported that although the commission merchants want free boxes, and many growers also; still there are objections to it offered by some, which render the adoption of the free package, and the making of it general; a matter whose postponement would, until after another State Convention, in the opinion of the committee, be advantageous. Fruit shippers and commission merchants are in favor of any means to be adopted which will prevent the spread of insects, and recommended the adoption of the free box system.

Recess of thirty minutes declared and a reassembling had at 1 P. M.

Mr. Cooke mentioned the advisability of publishing the reports of the Commissioners, and also of such synopsis as he shall choose of reports sent him from County Commissioners.

Dr. Chapin's report on scale insects of deciduous and ornamental trees was submitted and adopted.

Dr. Chapin offered the following:

Resolved, That it is hereby requested of the Board of State Viticultural Commissioners that the reports of the State Horticultural Commissioners, as submitted and approved by this Board, together with such synopses of the reports of County Commissioners as the Chief Executive Horticultural Officer shall choose in connection with his general report on the condition of the fruit growing interest of the State, be published as soon as possible in pamphlet form, for general circulation; the work to be supervised by the Chief Executive Horticultural Officer.

The resolution was adopted.

The following resolution was offered by Dr. Chapin:

Resolved, That the Committee on Transportation and Quarantine be requested to call upon the various transportation companies throughout the State, and ask their assistance in the enforcement of the quarantine rules and regulations established by the Chief Executive Horticultural and Health Officer for the preservation of our endangered fruit industries.

Adopted unanimously.

On motion, Professor C. H. Dwinelle was added to the committee.

Adjourned.

Approved June 29, 1882.

JOHN H. WHEELER,
Secretary.

OFFICE OF BOARD OF STATE HORTICULTURAL COMMISSIONERS,
111 Leidesdorff Street, San Francisco, June 29, 1882.

The regular quarterly meeting of the Board of State Horticultural Commissioners was called to order at 11:30 A. M. President Dwinelle in the chair.

Present—Commissioners C. H. Dwinelle, W. W. Smith, W. B. West, S. F. Chapin, A. Cadwell, Matthew Cooke, and the Secretary, J. H. Wheeler.

Absent—Commissioners M. T. Brewer, Felix Gillet, Albert S. White, Charles H. Shinn, and Ellwood Cooper.

Excuses were presented and accepted from Messrs. Brewer and Cooper.

In answer to a communication from Mr. Cooper, calling attention to the cottony cushion scale infesting certain orchards at Santa Barbara, the following resolution and recommendations were presented and adopted by the Board:

Resolved, That a special committee be appointed to consider means for the destruction of the Cottony Cushion Scale (*Iceria purchasi*), and the best means for preventing its spread; and that the said committee urge immediate and vigorous action on the part of the County Horticultural Commissioners in those districts.

Appointed: Ellwood Cooper, Dr. S. F. Chapin, and Matthew Cooke.

A communication was read from Felix Gillet, of Nevada City, calling attention to statements made relative to insects infesting the mulberry tree in California, in answer to which, the following resolution was adopted by the Board:

WHEREAS, It has been publicly reported that the mulberry in California, is a pestiverous tree, and unfit to be raised on account of being infested with scale insects; and, whereas, we consider such a report as doing a great injustice to a growing industry in this State—silk culture; be it therefore

Resolved, That the Chief Executive Horticultural Officer is hereby instructed to investigate the condition of the mulberry trees throughout the State, so far as insect pests are concerned, and report, at the next meeting of the Board, in what counties the scale or other insects are to be found on mulberry trees, and to what class of scale or insect they belong.

Mr. West, Committee on Red Spider, Mites, etc, read a report on experiments made on the same, which experiments extended through many years. With the most efficient means, he had never succeeded in destroying all vestige of the insects, and he was not yet able to report on a completely successful remedy. Whale oil soap and sulphur, together with tobacco decoction, had proved most successful and best.

Report placed on file.

After some discussion on the curculio of the plum, Dr. S. F. Chapin introduced a resolution for prohibiting the importation into this State of any trees, in view of thus keeping out this dreaded insect. The same was seconded and carried; but after further deliberation it was rescinded, and ordered struck off the minutes. In its place was substituted the following, offered by Dr. S. F. Chapin, seconded and carried:

Resolved, That the Board of State Horticultural Commissioners recommends to the Board of State Viticultural Commissioners the adoption of instructions to the Chief Executive Horticultural and Health Officer, as follows:

That in consideration of the great and constant danger of the introduction to this State of the curculio, or plum weevil, upon fruit trees from the Eastern States, he shall take the necessary measures to strictly enforce the quarantine rules relating to this subject, and shall establish such places as he shall deem necessary for the inspection of all trees imported into this State from without its limits, so that all such trees shall be held in his hand for examination and permit to go to their places of destination; and also that in order to enable this officer, or his properly appointed Inspectors, to perform this duty, the railroad and other transportation companies are hereby requested to aid in every way in their power the proper carrying out of this resolution.

The following was presented by A. Cadwell and adopted:

Resolved, That prominent fruit growers throughout the State be invited to contribute to a fund to bear the necessary expenses for legal counsel in sustaining horticultural quarantine. Contributions to be sent at once to the Secretary of the Board of State Horticultural Commissioners, John H. Wheeler, 111 Leidesdorff Street, San Francisco.

After general remarks on the action in Court pending, the following resolutions were offered and seconded:

Resolved, That the Board of State Horticultural Commissioners heartily approve of the present attempt of the Chief Executive Officer to enforce strict quarantine in accordance with the rules published by recommendation of this Board.

Resolved, That all persons having any interest in the preservation of our fruit industries are urged to give their earnest support to those laws which have been enacted with a view to their preservation.

Carried.

Moved, that at the next meeting of the Board officers be elected for the ensuing year.

Carried.

Following the above, Mr. Cooke reported on the satisfactory manner in which the quarantine work was progressing throughout the State, giving many interesting phases of the work by way of personal illustration, viz.: The successes of different fruit growers; their feeling of gratitude toward the Board for indicating the proper course for eradicating the pests, etc.

The President, Mr. Dwinelle, then addressed the Board. He spoke of the curculio and its attendant now threatening ravages; of the great exertion which should be put forth to prevent its introduction into California. He further noticed the readiness with which many personal enemies of the Horticultural Commission had now become the exponents of the valuable principles laid down by the Board, etc.

On the closing of Mr. Dwinelle's address the Board adjourned.

OFFICE OF BOARD OF STATE VITICULTURAL COMMISSIONERS,
111 Leidesdorff Street, San Francisco, September 28, 1882.

The regular quarterly meeting was called to order by President Dwinelle. Present—Commissioners Cooke, Smith, Shinn, Chapin, West, and the Secretary, John H. Wheeler.

Minutes of preceding meeting read, corrected, and approved.

In the election of officers announced at the preceding meeting which succeeded the above, the following candidates were elected without opposing nominations:

President: C. H. Dwinelle (reëlected).
Vice President: Dr. S. F. Chapin.
Secretary: John H. Wheeler (reëlected).
Treasurer: M. T. Brewer.

Charles H. Shinn announced his intention of resigning from the Commission before another meeting, as he intended to leave for an extended trip East; during which trip he expected to contribute to the Commission whatever experience he might meet with concerning horticulture.

A communication from the Viticultural Commission was read by the Secretary, recommending the Chief Executive Horticultural Officer to enforce the necessary rules for the protection of our trees from curculio and other noxious insects which may be introduced on nursery stock.

Mr. Cooke reported that he had decided to enforce the horticultural laws, and to have Inspectors appointed at Sacramento, Stockton, Los Angeles, Oakland, and San Francisco, to attend to and enforce the disinfection of all fruit trees imported during the ensuing year.

The Secretary read a report on the codlin moth, by Felix Gillet, of Nevada City, in which was detailed his successful conquest against this insect by the use of bands of cloth about the trees, to be removed and cleaned of insects lodging therein at stated periods, besides scraping and cleaning the trees well to destroy the larvæ and eggs. Mr. Gillet further reported on the successful use of sulpho-carbonate of potassium in fighting the apple tree root louse on young trees or nursery stock.

Some discussion arose as to how often bands or traps set for the larvæ or codlin moth should be cleaned. Gillet's experience was that the worm developed in fifteen days; Cooke's, eight days; Dr. Chapin's, nineteen days.

Mr. Cooke exhibited a parasite of the codlin moth of great interest to all. He further reported that, after extended conference with Commissioners, and silk growers throughout the State, and personal investigation, he could find no insect injurious to the mulberry tree.

A communication from Mr. Ellwood Cooper, of Santa Barbara, was read by the Secretary, urging the necessity of waging an immediate and vigilant war upon the cottony cushion scale of that county; the neglect of which would insure the early destruction of all their fruit interests.

Mr. Dwinelle reported that efficient work was being done by Colonel Hollister, of Santa Barbara, in fighting the *Icerya purchasi*, or cottony cushion scale, with hot water. Mr. Dwinelle further produced a communication from Albert White, of Riverside, which reported that the people of Los Angeles District had become fully alive to the necessity of washing trees and fighting insect pests generally, and that much washing with soap solutions had been done for the citrus trees about Los Angeles.

The second annual convention of California Fruit Growers, to be held at San Jose, on the fourteenth of November, was next considered.

The following committee was appointed to interview transportation companies in view of securing reduced fares for horticulturists visiting the convention at San José in November—Commissioners Cooke and Dwinelle. Messrs. Cooke and Chapin were appointed to prepare a programme for the above named convention.

Committee appointed to indicate programme for convention, and secure papers to be read at said convention—Messrs. Cooke and Chapin.

Professor Dwinelle exhibited roots covered with woolly aphis, suggesting that horticulturists look to the same remedy for this insect as is relied upon by viticulturists in opposing the phylloxera, viz., in resistant stocks, one year's experiment at the University with them having proved successful.

Meeting adjourned.

JOHN H. WHEELER, Secretary.

MINUTES OF THE FIRST ANNUAL HORTICULTURAL CONVENTION.

HELD AT SACRAMENTO, IN THE ASSEMBLY CHAMBER OF THE STATE CAPITOL, ON DECEMBER 6TH AND 7TH, 1881.

At the quarterly meeting of the Board of State Horticultural Commissioners, held September 29, 1881, the following resolution was presented and adopted:

Resolved, That the Chief Executive Horticultural Officer be authorized to call a general meeting of the horticulturists of California, to consider their interests in the matter of destroying insects injurious to fruit and fruit trees, the said meeting to be held at some convenient place in Sacramento, early in the month of December next. The above officer shall confer with representatives of the leading transportation lines, with a view of securing reduced rates of fare to those horticulturists attending the above meeting. At this Convention there will also be displayed apparatus for disinfecting, washes, insecticides, and free packages for fruits.

Pursuant to the above, the following call was made by Mr. Cooke, by publication and otherwise:

A State Convention of fruit growers, shippers, packers, nurserymen, and others interested in horticulture in California, will be held at the Senate Chamber, Sacramento, on Tuesday and Wednesday, the sixth and seventh of December, 1881, commencing at 10 o'clock A. M. of the sixth, for the purpose of consultation and discussion of the most practical means of exterminating the insect pests now infesting the orchards and gardens of the State, and such other subjects as may be introduced for the improvement of the fruit growing industries of California. The Central Pacific Railroad Company have kindly allowed a two-thirds rate of fare from all their stations in California to persons attending the convention, and have issued instructions to their agents at all points, as follows: To sell tickets at a two-thirds rate of fare to Sacramento and return, by trains arriving in Sacramento on the fifth, sixth, and seventh of December next, such tickets to be void after the twelfth of December (excepting the local rate between San Francisco and Sacramento, which will be the usual rate, five days' ticket, $5.) Those who have succeeded in subduing any of the insect pests of the orchard, etc., are requested to be present and bring their weapons of attack, for the information of those beginning the fight. As this will be the first convention of fruit growers, etc., in California, we predict good results, and request a full attendance.

By order of the Board of State Horticultural Commissioners.

C. H. DWINELLE,
President.

MATTHEW COOKE,
Chief Executive Horticultural Officer.

JOHN H. WHEELER,
Secretary.

SACRAMENTO, November 7, 1881.

The Horticultural Convention began its session in the Assembly Chamber, Sacramento, California, December, 6, 1881. The meeting was called to order at 10 o'clock A. M. by Matthew Cooke, Chief Health Officer. Upon motion of Dr. Chapin, Prof. C. H. Dwinelle was named as temporary Chairman, and William Johnston as Vice-Chairman. J. H. Wheeler and Edwin F. Smith were named as temporary Secretaries.

Mr. Johnston moved that a committee of five upon organization be named by the Chair. So ordered. Whereupon the Chair named, as such committee, A. S. White, of Riverside; R. B. Blowers, of Yolo; M. T. Brewer, of Sacramento; N. R. Peck, of Placer; and John McMullen, of Solano.

Matthew Cooke was, upon motion, added to the committee.

Upon motion of Mr. Johnston, the convention took a recess until 11 o'clock.

The convention reässembled at the appointed hour.

The committee upon organization submitted their report, recommending:

FOR OFFICERS.

Professor C. H. Dwinelle, President; Hon. Wm. Johnston, President pro tem.; J. H. Wheeler and Edwin F. Smith, Secretaries.

FOR ORDER OF BUSINESS.

1. Address by the President; 2. Report of Chief Health Officer; 3. Appointment of committees on ways and means, fruit growers, fruit shippers to Eastern cities, fruit shippers west of Omaha, fruit packers, commission merchants, nurserymen; 4. Address of welcome by Mayor J. Q. Brown; 5. Essay on insect pests by Dr. Chapin; 6. General discussion.

Mr. J. H. Carroll moved the adoption of the report. So ordered.

Mr. Johnston moved to limit speeches, other than essays and set speeches, to five minutes' time. So ordered.

Upon motion, the first order of business was passed until after the noon recess, and Matthew Cooke, Chief Horticultural Officer, was requested to present his address and report, which he did, and ended by announcing that an exhibit of insect pests would be made at the store of M. T. Brewer & Co., Second Street, between J and K, in the evening at seven o'clock; also of such apparatus as had been found to be most convenient for the applying of liquid solutions on trees, etc.

Mr. Johnston moved that a committee of five be named by the Chair to report on the address after the noon recess. Carried.

And the Chair named as such committee, M. T. Brewer, F. Gillet, J. H. Carroll, Charles Gammon, and E. R. Thurber. M. T. Brewer declining, Hon. Wm. Johnston was named instead.

A recess was taken until one o'clock P. M.

Upon reconvening the following report was made upon Mr. Cooke's address:

REPORT OF COMMITTEE ON ADDRESS OF MATTHEW COOKE.

The committee to whom was referred the report of the Chief Horticultural Officer of the State, Matthew Cooke, Esq., beg leave to report as follows:

The convention has doubtless listened with great pleasure and still greater instruction to the many valuable and useful suggestions therein contained, not alone to the producers of the fruits on this coast, but likewise to all shippers, consumers, and all others having in hand the well being of that inestimable source of our coast's wealth at heart. The committee trust that the report may be so placed before the public of the State that it may not fall as a dead matter, but that its full merit and usefulness may be perpetuated by becoming a text to be studied and learned in the interest of the great good that has called us together. Your committee further recommend that the report be published as soon as practicable for general circulation, and, in conclusion, beg to offer the following:

Resolved, That in Matthew Cooke the State has a first-class Chief Officer, and one who, appreciating the duties of his office, is willing to devote his labors to their fulfillment.

Resolved, That the convention of horticulturists here assembled, hereby tender him heartfelt thanks for his able essay on our needs, and promise him an effort to second him by our industry and perseverance in the good work.

WM. JOHNSTON, Chairman.

President C. H. Dwinelle here read an address to the Convention. On the completion of which, it was moved by Mr. Brewer that the same be submitted to the press, with the request that it be published, and made a part of the records of the convention. Seconded and carried.

ADDRESS OF WELCOME.

Mayor J. Q. Brown, of Sacramento, was introduced, and, pursuant to programme, delivered an address of welcome, which, at the will of the convention, he was requested to furnish, in synopsis, to the Secretaries, to be incorporated in the proceedings of the convention. [The synopsis has not been received at the time of making this report.]

Following the above, Dr. Chapin, of San José, was introduced and read a paper on "the scale insects infesting fruit and fruit trees."

By unanimous consent, Dr. Chapin's address was added to the record of the convention, with the request that the same be disposed of in a manner similar to other reports already produced.

DISCUSSION.

A discussion on subjects reported on, now took place, taking up in regular order the borers, codlin moth, scale, etc.

COMMITTEES APPOINTED.

The appointment of committees by the President was as follows:

Fruit Growers—A. S. White, E. R. Thurber, John McMullen, R. B. Blowers, W. Robinson, G. M. Gray, Mr. Barker, P. D. Brown, H. Wilson.

Eastern Shippers—J. F. Farnsworth, E. T. Earle, P. H. Platt.

Shippers to Points West of Omaha—W. R. Strong, Samuel Gerson, Eugene Gregory, E. T. Adams, D. De Bernardi, W. J. Wilson.

Commission Merchants—J. M. Hixson, San Francisco; Robert Hall, San Francisco; Mr. Littlefield, San Francisco.

Nurserymen—Robert Williamson, Sacramento; S. McKinley, Los Angeles; Felix Gillet, Nevada; Mr. Silva, Placer.

Ways and Means—M. T. Brewer, A. T. Hatch, Rev. W. R. Peck, George McMullen, W. H. Jessup.

All committees were instructed to submit reports on Wednesday forenoon.

The convention here adjourned to reassemble at 10 o'clock A. M. on the following day.

EVENING MEETING.

The members of the convention, by invitation, met at the business house of M. T. Brewer & Co., to witness an exhibition of insects injurious to fruit and fruit trees. Many citizens were also present. The exhibition was gotten up by Mr. Cooke, and consisted of specimens of all the most destructive insects to the horticultural interests that have made their appearance in the State. The specimens were shown under magnifying glasses, and in different stages of existence and positions, so as to exemplify, in a good degree, their habits and natural history. The occasion was also made one of social intercourse among the fruit growers and their friends, the conversation generally turning upon the fruit industries of the State.

SECOND DAY.

The Horticultural Convention met at 10 o'clock A. M. Minutes of the preceding session were read and approved. A. S. White, Chairman of the Fruit Growers' Committee, submitted the following

REPORT OF THE FRUIT GROWERS' COMMITTEE.

The committee appointed by the Fruit Growers' Convention would recommend the following report:

WHEREAS, The fruit growing interests of this State, which are of so vast importance, are threatened with destruction by insect pests of various kinds; and, whereas, any individual action is totally inadequate to meet the enemy successfully;

1. *Resolved,* That the fruit growers and farmers of the State be requested to give their earnest support to the horticultural laws, and give their united efforts to sustain the Chief Health Officer in the execution of the same.

2. *Resolved,* That the fruit growers in every county, where Commissioners have not already been appointed, shall demand of the Supervisors that they appoint Commissioners according to the requirements of the law.

3. *Resolved,* That we recommend that the orchardists of the State shall purchase only such trees, plants, or cuttings as are known to be free from infectious diseases, and are accompanied by a clean bill of health from the Commissioner or Inspector.

4. *Resolved,* That all nurserymen shall be required to disinfect all trees and plants to the satisfaction of the Commissioners or Inspectors before delivering them to their customers.

5. *Resolved,* That we recommend to each and every farmer and fruit grower, as good citizens of the State, to use all practical means to keep his trees free from all insect pests, that his orchards may not become breeding grounds to the damage of his neighbors.

6. *Resolved,* That we request the transportation companies not to return fruit boxes or baskets between the twenty-fifth of June and the thirty-first of December.

7. *Resolved,* That we recommend that the study of entomology be introduced into our public schools, so that the rising generation may be wiser than their fathers.

A. S. WHITE,
E. R. THURBER,
JOHN McMULLEN,
R. B. BLOWERS,
G. M. GRAY,
MR. BARKER,
P. D. BROWN,
H. WILSON,
Fruit Growers' Committee.

Some discussion followed the presentation of the above report, many objecting to the clause concerning the return of empty boxes by transportation companies.

The report was finally adopted without alteration.

REPORT OF SAN FRANCISCO COMMISSION MERCHANTS.

The committee of San Francisco commission merchants reported as follows:

Mr. President and Members: The undersigned commission merchants of the City of San Francisco, appointed by this convention to report such advice as we deem proper for the improvement in quality of orchard produce, respectfully submit the following: In order to meet the requirements of the trade, a choice fruit is an imperative requirement, and we are perfectly satisfied that any work done in an intelligent manner will well repay the producer and have a marked effect on the advance of sales and net proceeds, as it costs the same freight and drayage on inferior fruit shipped that it does on first quality. We earnestly recommend to the fruit growers to use every effort to improve the produce of the orchard; and in every respect we will use our endeavors to assist in your work. We wish it to be understood that we cannot in any way be held responsible for any cost that may be attached to the shipment of fruit to us in violation of the quarantine rules and regulations and other laws for the protection of horticulture.

J. M. HIXSON,
S. LITTLEFIELD,
ROBERT HALL,
Committee of San Francisco Commission Merchants.

The report was adopted.

REPORT OF COMMITTEE ON NURSERIES.

The following was submitted and adopted:

Your Committee on Nurseries begs leave to report, that whereas sundry kinds of insects injurious to fruits and fruit trees, vines, plants, etc., are infesting the orchards and gardens of this State; and whereas, these insects are spreading very rapidly, and if not checked, bid fair to ruin the great horticultural interests of our country; and whereas, the nurserymen and tree dealers who disseminate trees and plants all over the country, are necessarily in position to scatter these pests far and wide; or, on the other hand, to aid materially in checking the spreading of them; therefore, we, your committee, recommend and urge all nurserymen and others disseminating trees and plants, to thoroughly disinfect all trees and plants of every description before sending them out or offering them for sale.

ROBERT WILLIAMSON,
FELIX GILLET,
S. McKINLAY,
C. M. SILVA,
Committee on Nurseries.

The report was adopted.

REPORT ON FRUIT PACKAGES.

To the Board of State Horticultural Commissioners:

Your committee appointed at a convention of fruit growers, held at Sacramento, December fifth to eighth, on the subject of "disinfecting of fruit packages" and "a cheap free package," report jointly as follows:

To make a perfect system, one of two plans must be adopted; either that of providing at each station or landing whence fruit is shipped, an apparatus for the purpose of fumigating or disinfecting, or a general location in the principal cities where the packages can be treated in large quantities before reshipping to the grower.

Under the first plan, the cost of apparatus in so many places would result in such a tax on the shipper as to be altogether too expensive to be generally adopted, except under compulsion, while at the same time, it does not prevent the spreading of the pest during the journey to the proposed point of treatment. Under the second plan, the obtaining of sufficient room in cities to handle the immense number of packages accumulating daily, together with the extra cartage and the elaborate system of accounts necessary to be kept between the commission merchant and the manager of the disinfecting establishment, would make it, while perhaps more efficient, quite as expensive. It is estimated that, under either plan, an average charge of one and one half cents per package will be necessary to cover the cost every time it is disinfected.

So far as the process of disinfection is to be observed, your committee, after investigating the various plans proposed and submitted, submit the following as the most economical, while equally sure: That each package be placed in a close tank and exposed to the action of live steam, at a minimum temperature of two hundred degrees Fahrenheit, for a minimum period of five minutes.

Your committee is clearly and unanimously of opinion that a free package system is preferable to any system of disinfecting that can be adopted, numbering among its advantages:

First—The saving on freight to market, on account of the lesser weight of the free package, of one half cent each on an average.

Second—The saving of cartage on return package, for which the commission merchant is willing to make an allowance of one cent each.

Third—The greater price that can be realized for fruit by the commission merchant from the actual consumer, on account of its being in clean, new packages, and the fact that canneries are willing to pay an additional price if they do not have to nail up and reship empties, both of whom have agreed that an increased price can be realized of two and one-half cents on a twenty-five pound, and five cents on a fifty pound package.

Fourth—The saving of the cost of free disinfecting, which we before stated to be one and one third cents each.

Fifth—We have figured closely, that with the advantages already claimed, and the low prices at which free packages can be procured, say, on the standard fruits that are marketed in boxes, about fifty per cent of the cost of the present return package, and for chests about twenty-five per cent, the fruit grower will find, after a full trial of the free package system for a term of years, that he has been at no actual additional expense, and that he has by its adoption reached the only successful method, outside of the orchard, of ridding it of pests.

We find an ordinary free package of twenty-five to thirty pounds weight of peaches, plums, or apricots can be furnished for about six cents; one holding forty pounds, for Eastern shipping, nine cents; one holding sixty pounds, regular apple size, eleven cents; berry crates, with trays or baskets, holding forty pounds strawberries, or forty pounds raspberries, or fifty pounds blackberries, or sixty pounds currants, or sixty pounds cherries, for twenty-five cents.

As an illustration of the actual saving, by using the free package in place of a return package, we submit the following estimate of saving on a twenty-five pound box:

Allowance by commission merchant for drayage	1 cent.
Cost of disinfecting	1½ cents.
Freight to market	½ cent.
Increased value from consumer or canner	2½ cents.
Loss in transit and wear and tear	2½ cents.
Total	8 cents.

R. B. BLOWERS,
WM. H. JESSUP,
A. T. HATCH,
A. D. CUTLER,
Committee on Fruit Packages.

An extended discussion followed this report on all subjects involved in the same, more especially regarding the use of free packages, which ended by the adoption of the report as amended by Mr. Hatch, to the effect that disinfection be recommended instead of the free package system.

Before closing the morning session, President Dwinelle made some remarks on the good already accomplished by the convention.

At the reassembling, an informal discussion was had on mildew, pruning, etc.

The following communication was read by the Secretary, J. H. Wheeler:

COMMUNICATION FROM CANNERS.

To the Convention of Fruit Growers at Sacramento, Cal.:

The undersigned, manufacturers of hermetically sealed goods, recommend to the fruit growers who ship their peaches to the San Francisco market the abolition of baskets and the substitution of closed boxes of uniform size, holding twenty-five pounds each, thereby preventing much of the stealing and mashing of fruit which now causes a large percentage of loss to both shipper and purchaser.

[Signed]
CUTTING PACKING COMPANY, by A. D. CUTLER,
SOL. WANGENHEIM & CO.,
J. M. SPAFFORD & CO.,
CODE, ELFELT & CO.,
A. LUSK & CO.,
KING, MORSE & CO.,
J. LUSK CANNING COMPANY,
SCHAMMEL, REYNOLDS & CO.,
M. BANNER & CO.

SAN FRANCISCO, December 5, 1881.

REPORT ON FRUIT SHIPPING TO EASTERN STATES.

To the State Convention of Horticulturists:

Your committee appointed on fruit shipments to the Eastern States would beg to report as follows:

We have given the subject as careful examination as time would permit, and we find that the amount of green fruit shipped to the Eastern States is of great importance to the fruit growers of our State. Over four hundred carloads of green fruit has been shipped east of the Missouri River during this year. We find that several important matters stand in the way of Eastern shipments of fruit, one being the high rate of freight charged per car, and another the codlin moth pest. Both of these ought to be overcome. The first demands, and should receive, careful consideration at the hands of the railroad companies, and the other can be remedied by a vigorous and persistent effort on the part of the fruit growers. Fruit that is at all infected by codlin moth becomes almost worthless before it reaches the Eastern States. We would say that we deem it of the utmost importance to growers to do all in their power to make it of profit to the fruit shippers to still further extend their already large field of outlet for California's fruit productions.

Some have said, in words, that nothing can be done to exterminate the pests; others have spoken still louder by their acts and their failure to fight the destroyer, thus injuring themselves and their neighbors. However, enough has been done to prove, beyond a peradventure, that systematic work will save the orchards and vineyards of our State, and cause them to continue to be the fruitful source of income to their owners that they have been in the past. We will not here individualize, but we will say that many fruit growers have, by their persistent efforts, saved their crops in a marketable condition, when, if they had not used precautionary measures, their fruit crops would have been failures. But freight rates and the codlin moth are not the only obstacles that meet the Eastern fruit shipper—the state of the weather while on the way, and the condition of the market when his fruit reaches its destination, gives him, if possible, even more concern.

The contents of a car is often spoiled by the heat in transit, and both fruit and freight money become a total loss. Again, it has often occurred that fruit that cost one dollar and fifty cents per box on the track in Sacramento, is sold at twenty-five cents or fifty cents per box in Chicago, owing to a glutted market or the heated condition of the fruit on arrival.

These last obstacles are unavoidable, but the others can and should be remedied.

In conclusion, we here express our earnest hope that all growers will coöperate, and, by united and systematic effort, completely eradicate our fair land of the pests that are gnawing at and sapping the foundations of all hopes of prosperity to fruit raisers.

[Signed]
J. F. FARNSWORTH,
EDWIN T. EARL,
P. E. PLATT,
Committee on Eastern Shipping.

The report was adopted.

REPORT ON FRUIT SHIPPING WEST OF OMAHA.

The field belonging to this committee covers a great but sparsely populated territory, embracing eastern California, Nevada, Idaho, Montana, Utah, Wyoming, Colorado, and Nebraska. This territory has a great variety of climates and soil, and is generally of high altitude, with frosts during a large portion of the year, and generally deprived of rains and moisture for long periods; and with no facilities for propagating fruit or fruit trees, the supplies in the future, as heretofore, will be required from this State.

As the resources of this growing outlet for California fruits are constantly increasing, it is but fair to presume that the population will increase in proportion, and the demand for fruit will be greater in consequence. To meet the requirements of this trade, it will necessitate the production of the best quality of every description of orchard products, the cultivation of the best varieties, and the careful picking, packing, and handling of the same. We would, therefore, suggest:

First—The varieties to be cultivated: The choicest and most desirable for flavor, size, color, beauty of form. Our instructions from consumers are to "ship nothing but choice fruit," with the invariable advice that the cost of transportation is fully as much on the poor fruit as on the good.

Second—Fruit required for this trade should be carefully picked just before reaching maturity—that is, when it is hard and firm in every part. Even a day's delay in picking will so hasten the softening of fruit as to render it unfit for shippers' use. Fruit gathered before being fully developed is of no value to the dealer or consumer—never ripening, but becoming shriveled, tough, and tasteless; yet, if gathered and packed when ripe, it will soften and decay before it can be marketed. Great care should be exercised, and more attention given to these points than heretofore.

Third—In packing, the greatest care should be used. Fruit of uniform state of ripeness should only be put in the same box, and should be as uniformly sized as possible, placed carefully in layers, packed solid and full. Inferior, or bruised, or overripe fruit, placed with hard and choice, ruins and renders the whole unfit for trade, and very often ruins the reputation of the dealer, while it at once points out the carelessness of the grower.

Fourth—Honest, intelligent, and careful fruit growers cannot fail to be well paid for their labors, while on the other hand, the slovenly and dishonest must certainly suffer the reverse. "Be sure your sins will find you out," may be well applied in this, as in all other careless or dishonest dealings.

Fifth—We recommend uniformity in style and dimensions of boxes for use by fruit packers and growers. For apples, fifty-pound boxes, Sacramento style and dimensions; pears, forty-pound boxes, as used for Eastern trade; plums, twenty pounds; peaches and apricots, twenty to thirty pounds; depth from four and one half to seven inches, according to size of the fruit. For cherries and small fruits, the San Francisco boxes that are used in chests—ten pounds each.

Sixth—We recommend the adoption of the "free box" system, as they can be made lighter than return boxes, and furnished at little more than half their cost. The fruit is then sold by the box, and will command a higher price, as the free package presents a new, smooth, and bright appearance, which goes far towards the sale of the contents. The return box has been the cause of much of the dissemination of the codlin moth and worm, and of other insect life which has brought ruin to our orchards throughout all parts of the State.

Seventh—Every grower should place his initials on all the boxes leaving his premises, and should be scrupulous to mark the name of the variety of fruit, and its size and quality, the state of ripeness—hard, medium, or soft—on the end thereof. The adoption of this system will be at once a great benefit to dealers, a convenience to growers, and a certain help towards repressing much unnecessary profanity among dealers that are obliged to burst open boxes in order to ascertain their contents.

We believe that the fruit production of California is but yet in its infancy. Twenty-five years ago scarcely anything in the way of fruit was raised in this State. At that time one of your committee purchased the first peaches produced in Smith's gardens (near this city) for $1 50 each, selling them readily for $2 apiece. Apples were first imported from South America in 1851, and sold from fifty to seventy-five cents per pound. After this, Oregon fruit orchards came into being, and partially supplied the wants of California. From 1855, attention was turned to the capabilities of the soil and climate of this State, and the river bottoms and desirable lands near the coast, and afterwards the foothill regions, and even higher altitudes, were set out to a considerable extent with fruit trees. The almost universal success in production has demonstrated that California can yet be made one of the greatest fruit countries in the world—equaling in quality, size, and beauty, that of any other portion of the earth.

We believe that the terrible pests of the moth, worm, scale, and other insect life that has developed itself, can be entirely eradicated from our State if the efforts now being made under the laws passed by our last Legislature are heartily sustained by all, and the combined intelligence and experience acquired on this subject be put into force.

The territory assigned to this committee embraces but a small portion of the population which has to be supplied from the produce of the California orchards; San Francisco, with its three hundred thousand population, and other portions of the State with equal or greater population, has to be supplied through dealers; the large and constantly increasing outlet for carload shipments to the great cities and dense populations east of the Mississippi River, and the immense and rapidly growing demand for California canned, desiccated, and dried fruits in Europe and elsewhere, putting to test the capabilities of the immense canning establishments already in successful operation, and leading to the establishment of others, point unerringly to the great future extended to the cultivators of fruit in this State, and affords much encouragement to dealers.

In conclusion, we urge upon all engaged in the growth, packing, and sale of fruit, that the most studious care and good judgment should be exercised, and strict and unswerving justice and honesty of purpose in every transaction should be observed. No business has suffered more by a neglect of these self-evident facts. The grower has often shown himself more anxious to palm off his products with reckless disregard of the interests of the dealer and consumer, and without a thought of his future reputation. Such men only ruin business, and certainly do not deserve success. They should be discarded as unworthy of countenance.

All of which is respectfully submitted.

W. R. STRONG,
EUGENE GREGORY,
SAMUEL GERSON,
C. T. ADAMS,
D. De BERNARDI,
W. J. WILSON,
Committee.

Sacramento, December 7, 1881.

The report was adopted.

By unanimous consent of those present the business of the convention was continued to an evening session, which was opened by the President, and business continued as before.

REPORT OF COMMITTEE ON WAYS AND MEANS.

Your Committee on Ways and Means beg to report as follows: We find it necessary to raise $100 to reimburse the Chief Horticultural Officer for moneys he has expended in calling this convention, to wit:

Large posters and printing postal cards	$18 00
Postal cards	20 00
Postal stamps	16 00
Clerical help in issuing postals, posters, etc.	26 00
Arranging Assembly Chamber and incidental expenses	20 00
	$100 00

We would also recommend a fair compensation to our two efficient Secretaries and to the two Pages for their services.

To provide for all of which we would recommend an assessment of $1 50 on each member of this convention, to be collected immediately; and furthermore, should there be any surplus, then such surplus to be donated to the Agassiz Society to use in the purchase of books and instruments for use in said society.

Your committee, realizing the great value of the book recently issued by our Chief Horticultural Officer, and fully appreciating its value as a disseminator of useful knowledge, we respectfully recommend to your honorable body that Matthew Cooke, Esq., be requested to prepare and issue a larger and more complete work, covering such ground as he deems best, and to have such work illustrated with ten full pages of colored plates, and that this convention make such subscription for books as will warrant Mr. Cooke in preparing such a work.

Your committee has ascertained that two thousand copies of a book of from three hundred to three hundred and fifty pages, with ten pages of colored plates, can be printed, bound, and lithographed for $5,500.

We suggest that a subscription list of 1,500 at $5 each will make $7,500, leaving $2,000 to enable Mr. Cooke to collate throughout this State such information as he may require, and make such further investigation and experiments as he may find necessary. In view of these facts, and knowing the value and need of such a work, we recommend that a subscription list be opened immediately, and that the members of this convention be requested to subscribe for as many copies as they can. Your committee believe that such a course will do more to lead fruit growers to labor for the eradication of the insect pests than any other course that can be pursued.

M. T. BREWER,
A. T. HATCH,
GEO. C. McMULLIN,
WM. H. JESSUP,
N. R. PECK.

The report was adopted.

REPORT OF COMMITTEE ON DRIED FRUITS.

Your Committee on Dried Fruits beg leave to report as follows: One of our committee having made a canvass of three months in the Eastern States, visiting the principal cities, makes the following statement: That what he saw there convinced him that the dried fruit interest of this State is destined to be one of much more importance than has been generally accorded to it; while our canned fruits have attracted much more attention than our dried products, the latter is gaining favor since the introduction of evaporated fruits.

Our sun-dried or evaporated apples will find ready market on this coast, on account of the limited amount which will be produced because of the ravages of the codlin moth and other pests; while, on the other hand, pears, if properly prepared by evaporation, being pared and cut into eighths, will command a good price. Any variety of pear suitable for drying will meet the requirements.

Peaches, in consequence of the demand for canning purposes, command too high a price to make drying profitable, except in localities too far removed from canning establishments. They should be placed on the market either peeled, or otherwise, in an attractive form, so as to insure the most remunerative price.

Apricots, nectarines, and pitted plums, on account of their not being produced in the Eastern States, will always command good prices.

The prune d'Agen can be made profitable, but growers must meet the competition of European products, more particularly those of France. They should be most carefully cured and packed. We have still much to learn in assorting and curing.

We believe that the fig is destined to become an important product among our dried fruits.

Our observation leads us to believe that most of our dried fruits, to become profitable for shipping to the East, should be prepared by artificial evaporation. People purchasing evaporating machines should be careful that they be not deceived by misrepresentations of interested parties regarding the drying capacity of their machines, as much loss is sometimes made thereby.

With regard to the proper packages for dried fruits, the following are recommended by the State Horticultural Society:

For peaches, inside measure—

9 ×9⅛×15 inches, holding 40 ℔s.
5 ×9⅛×15 inches, holding 20 ℔s.
2¾×9⅛×15 inches, holding 10 ℔s.

The same size for apricots, pitted plums, and prunes, will hold respectively, 50 ℔s., 25 ℔s., and 12½ ℔s.

Apples—

9×9⅛×15 inches, to hold 30 ℔s.

Small packages of light material to pack in crates of five pounds, 4½×5×9⅛ inches.

W. B. WEST, Chairman.
S. T. CHAPIN,
A. T. HATCH,
J. M. HIXSON,
M. T. BREWER.
Committee.

The report was accepted.

REPORT OF COMMITTEE ON FRUIT PACKING.

To the Fruit Growers' Convention:

Gentlemen: Your committee represents a fruit interest second to none in the State, using fully one half of the green fruit produced as a whole, and three quarters of certain varieties, such as apricots, Bartlett pears, peaches, plums, and quinces. As representing such an interest we desire to bring before your body these facts:

First—To compare favorably with foreign productions of the same character, we require a superior quality of size, ripeness, and flavor.

Second—The territory we are now endeavoring to supply in competition with Eastern producers, is one that, through the drouth of the past season and other favorable circumstances, has been opened in a larger measure than ever before, and can only be retained by concessions in prices of material and rates of freight that would bear a favorable comparison with those at the East, and call for a mutual understanding and agreement as to prices between the fruit grower and the canner that will fairly remunerate the grower, and allow the canner the opportunity to canvass that market with a fair hope of successful competition in seasons less favorable than the last, bearing in mind that the superior manner in which the California canner is accustomed to prepare his goods, as compared with the Eastern manufacturer, will insure a preference at reasonable prices.

Third—In order to increase the foreign demand of Europe, the East Indies, Australia, and China, it must be borne in mind that the greater proportion of their inhabitants are people of moderate means, who are accustomed to closer economy than the average Californian, and that a small difference in price here, when increased by the natural additions of freight, long credits, insurance, etc., is increased many times before the goods reach the consumer, and if not kept down to a minimum, reduces the consumption largely.

As an example of this we would cite the apricot crop of Portugal for 1880, which although only an average one, was put upon the English market at such prices as to almost totally exclude the California apricot.

As a further evidence of the beneficial effects of moderate prices, we will call your attention to the enormous consumption of canned salmon by the working classes of England, when placed at a price within their means, it being noted that every reduction in price has been followed by a corresponding increase in consumption, till at this time the enormous catch of 250,000 cases (2,100,000 dozens of cans) on the Columbia River is exported to and sold in England, at a price to the eater of twenty cents per can, against a consumption in 1876 of 50,000 cases, at forty cents per can.

Fourth—In order to produce the fair average remuneration of the grower, as many intervening profits as possible, such as freight packages, small and worthless fruits, etc., must be abrogated; and there must also be a certainty as to quantity and quality of the crop as a whole, and individual shipments in particular, regarding which points the canner is usually in the dark up to the moment of use.

Fifth—Your committee earnestly advocate the adoption of the free package, whenever practicable to the grower, and feel sure the canners will advocate it, to the extent of bearing a fair proportion of the cost—say one half.

Sixth—The unanimous recommendation of the canners of San Francisco and vicinity that Sacramento River peaches be shipped in close boxes, rather than baskets, has our approval, from the fact that fully five per cent of the best part of each basket is ruined, by stealing and mashing during shipment and distribution.

In this particular, we would call attention to the fact that there is no uniform weight of peaches in baskets, it varying from twenty pounds to twenty-five pounds. That cannot but result in constant misunderstandings between shipper and consumer.

Seventh—We recommend for canners' use the following standard varieties:

Apples—Fall and Newtown Pippins.
Apricots—Royal.
Cherries—Large white and meaty varieties.
Plums—Yellow Egg, Greengage, Coe's Golden Drop, Columbia, Washington, Jefferson, Ickworth.
Peaches—Yellow Crawford, White Heath, Yellow Cling.
Pears—Bartlett.

Eighth—While we are not familiar with the causes and remedies of the various fruit pests, we perhaps are in a position better than the majority of consumers to appreciate their baneful effects, and shall at all times aid in their extermination in any manner your society may decide best.

Ninth—We recommend a closer and more intimate relation between the canner and producer, in order that canned fruits may become like many articles familiar to us, a necessity rather than a luxury, and to this end we invite at all times a free, frank, and open discussion of the points suggested in this report.

A. D. CUTLER,
J. H. MORRIS,
Committee on Fruit Packers.

Sacramento, December 7, 1881.

REPORT OF COMMITTEE ON RAILROAD FREIGHTS.

To the State Board of Horticultural Commissioners:

A committee of five was appointed by the Horticultural Convention, which was in session in Sacramento, December sixth and seventh last, to wit: E. T. Earl, W. R. Strong, J. M. Hixson, M. T. Brewer, and A. T. Hatch, for the purpose of conferring with the railroad companies on the subject of reduction of rates of freights on fruits. Said committee to report to your honorable body.

Therefore, said committee beg to report as follows:

On the twenty-second day of December, 1881, the committee (with the exceptions of Mr. E. T. Earl and J. M. Hixson, who were at the time in the southern part of the State) called upon General Superintendent A. N. Towne and General Freight Agent J. C. Stubbs, at Mr. Towne's office in San Francisco, where an hour and a half was spent in a discussion of the subject in its various phases. While the officers of the railroad seemed to be willing to accede to any reasonable request, your committee failed to show how the railroad company would be benefited by making concessions (at least to their satisfaction). A guarantee of an increase of the amount of freight to any considerable extent, might be met by them with a reduction equal to seventy per cent of the net profits arising from such increase in quantity, providing said increase resulted from or on account of said reduction in rate. Furthermore your committee saith not.

Respectfully submitted.

A. T. HATCH, Chairman.

The Committee on Ways and Means, after canvassing the convention in accordance with the adopted report to the Board made before, submitted the following as their final report:

RECEIPTS AND EXPENSES OF THE CONVENTION.

Cash received from convention by M. T. Brewer	$127 75
Cash by M. T. Brewer and M. Cooke	19 10
Total	$146 85
Cash Cr.	
By printing fifteen hundred posters	$18 00
By printing two thousand postal cards	4 00
By printing one half letter circular	2 00
By two thousand postal cards	20 00
By twelve hundred one cent wrappers	13 45
By postage stamps	3 30
By labor mailing, posting, etc.	12 00
By labor hired for setting up, attending to, and tending doors, exhibit	26 50
By cash paid expressage	2 10
By cash paid janitor Assembly Chamber	39 50
By cash paid two pages at convention	6 00
Total	$146 85

IN MEMORIAM.

WHEREAS, John B. Saul, of Oak Shade, Yolo County, has been removed by death; therefore, be it

Resolved, That in him a typical horticulturist has been lost, whom Californians truly miss. Born in Ireland, early removing to America, studying and practicing horticulture under the instruction of Downing and his associates upon the Hudson, he soon became known as exceptionally well versed in the literature and skilled in the practice of his honorable calling. In California he distinguished himself and won deserved success. His example in close attention to every detail of his calling, and perseverance in striving for the highest excellence, in the face of great difficulties, is worthy of praise and imitation by others. His loss will be sincerely felt by all who knew him.

ROBERT WILLIAMSON,
MRS. JOHN BIDWELL,
R. B. BLOWERS,
C. H. DWINELLE,
A. T. HATCH.

Adopted.

The convention then adjourned to meet in San José on the second Tuesday (fourteenth) of November, 1882.

JOHN H. WHEELER,
Recording Secretary.

ADDENDA.

The following Reports were received too late to be placed with the Reports of the other Commissioners.

REPORT BY S. F. CHAPIN, M. D.,

COMMISSIONER FOR THE SAN FRANCISCO DISTRICT.

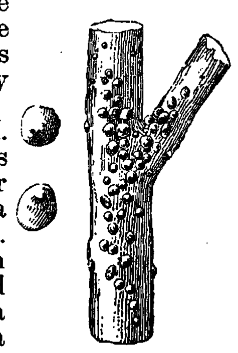
SCALE INSECTS.

The prevalence of scale insects in the orchards of Santa Clara Valley during the past few years has afforded ample scope for their study, to which I have for the past three seasons devoted what time I could command. Assigned to this work by you, I shall report as concisely as possible the information gained, and the results obtained by numerous experiments carried on and observed for two seasons. I shall here use in this paper, as a part of it, a report presented to the Santa Clara County Horticultural Society, August 6, 1881, by Mr. D. C. Vestal and myself, with such revision and correction as another year has shown to be needed, and with added memoranda to the experiments detailed, in order to present their full effects after a lapse of more than a year. I shall also detail other experiments, and shall refer to work done on an extensive scale for the destruction of the scale pests, and which has shown most gratifying results.

All scale insects impair, to a greater or less degree, the vitality and productiveness of the tree or plant upon which they live. Of the seven species which have here been observed as infesting our deciduous orchard trees and fruits, five are of frequency and of such importance as to attract the attention of orchardists. These are the *Lecanium oleæ*, *Aspidiotus rapax*, *Aspidiotus conchiformis*, *Aspidiotus perniciosus*, and the *Icerya purchasi*, the two last named being the most dangerous of all scale pests which the orchardist has to encounter.

LECANIUM OLEÆ.—This scale is beginning to attack other trees than the orange and its kindred. A year since I examined an orchard where it existed in overwhelming numbers upon the German prune, Briggs' Red May, and the Early Crawford peaches, upon the Moorpark apricot trees, and most of all upon the *Petite prune d'Agen* trees. This is believed to be the direct result of planting a few orange trees close by. Mr. Ellwood Cooper has written fully upon this scale, to whose reports I refer you.

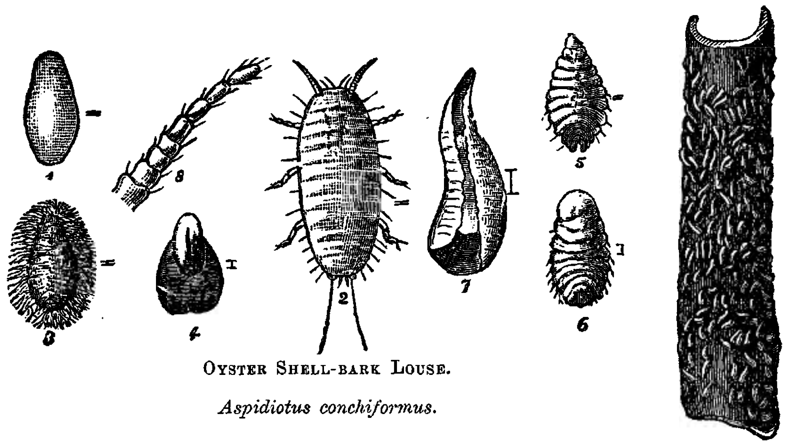
ASPIDIOTUS RAPAX.—So named by Prof. J. H. Comstock. This scale is rapidly spreading, and is now found in many places where unknown a year or two ago. It seems to be most prominent in Santa Cruz County, where it can be abundantly found. I have, during the past two seasons, observed it in many places in Santa Clara County, and have had specimens sent me from San Lorenzo, Alameda County, where it was abundant upon pear trees, a branch sent being well covered with the old scale, and also newly hatched young crawling about.



GREEDY SCALE.
Aspidiotus rapax.

This scale seems to be native to the willow and alder, and other indigenous trees. It, however, is found in great numbers upon acacia trees, upon the black locust and poplar, and upon some of our orchard trees, as the pear and apple. This scale somewhat resembles the *Aspidiotus perniciosus*, and by many is confounded with it, but it is not to be compared to the latter for destructiveness.

Aspidiotus conchiformis.—The one longest known, and which was discovered and described in Maine in 1794, has ever since that time infested the apple tree particularly, although found upon other fruit trees and upon the currant. This is now found in great numbers upon almost all old apple trees on this coast, and is commonly known as the bark louse or the oyster shell scale. It may be found described in works on entomology. This species has not caused so much injury as to alarm fruit growers to any great extent, although it is described by Dr. Packard as doing more injury to the apple tree than any other insect known.

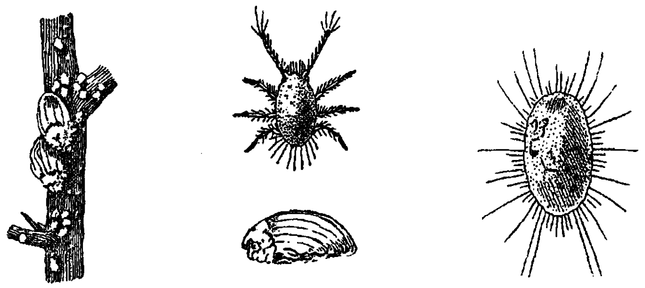


Oyster Shell-bark Louse.

Aspidiotus conchiformus.

COTTONY CUSHION SCALE.

Next will be described a comparatively new scale heretofore, but one which has within the last two or three years been ravaging many localities in widely different parts of the State. This is the so-called dorthesia, or, as named by Maskell, *Icerya purchasi*, and called by Mr. Matthew Cooke the cottony cushion scale.



Cottony Cushion Scale.
Icerya purchasi.

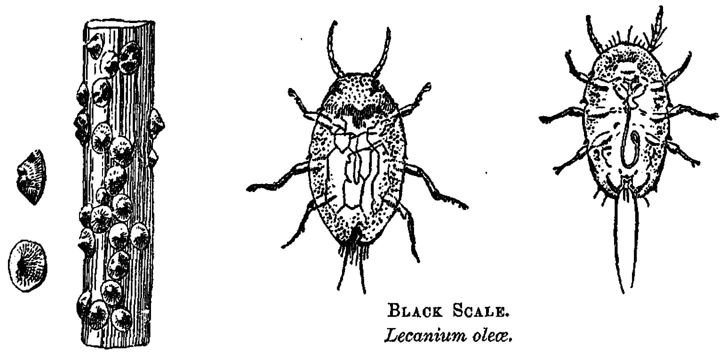
This scale has been, it is asserted, known to be on the acacia for seven years in San José, but it is only during the past and present seasons that it has attracted attention. Its great prolificness, and its destructive abilities, have called widespread attention to it. This pest attacks everything in the way of tree, vine, or shrub; all the evergreens, as well as deciduous trees that fall in its way are attacked, and every ornamental shrub on the lawns of some portion of our cities will show its presence. The ivy, even, is not proof against it. In San Rafael, San Mateo, Santa Barbara, and Los Angeles, it is well established. While in San José it has not this season caused so great damage as last, yet in the citrus-growing regions it is becoming one of the most serious pests they have to encounter, and it is even stated that, should its ravages not be checked, orange and lemon culture will have to be abandoned.

From the rapid destruction which follows the presence of this scale, it is well that it should be widely recognized, and its first invasion noticed and checked. In San José, in 1881, it was first noticed in May as the fully developed female, from which the first brood of young then appeared.

The present season of 1882, the first young appeared May 25; the mother insect having gradually matured her eggs from the opening of Spring until the young were hatched. The egg of the *Icerya* is small, pale or orange red, elongated and ovoid. The young just hatched out are very active, and are very minute, perhaps the twenty-fifth of an inch in length. The body is pale red; the six legs and two antennæ are black. The antennæ are long and club-shaped, and have from six to nine joints, as they are further matured. The antennæ are covered with long hairs, which bristle forth prominently. The eyes are small and black. Between the pair of forelegs on the under side of the body is to be seen the beak or sucker, by which the insect secures its nourishment.

The females partly grown are of a variety of colors, orange red mostly, and spotted over with white and green; some are nearly entirely a dirty white, and many are a pea green. It seems that the coloring matter of the plant they are upon colors them to some extent. Their body is ovoid and elongated and flattened, the back being ridged up with several segments quite prominent. Around the rim of the body are a multitude of hairs, standing out prominently. Around the rear half of the body, on its rim, is a row of tubercles or spinarets, from which a white secretion issues, forming a cottony cord, and these placed side by side and the interspace filled up by the same material running lengthwise the body and projecting from it, gives the whole a ribbed, satin-like appearance, whitish in color. Gradually, as the insect matures, these projecting ridges approach each other at the ends, and are joined together and curved under slightly at the point, while the sides are at the same time curved under the whole length, and the edges joined together with a flat ribbon-like band, the whole forming, when complete, a soft elastic white sack, the size and somewhat the shape of a medium-sized white bean. The length, when mature, is about three eighths of an inch; the width, one fifth of an inch.

Inside the sack are deposited the eggs of the female, among the interstices of a mass of cotton-like fiber, which under a high magnifying power is shown to be round and not more than one sixth part the thickness of pure cotton fiber, with which it was compared in the same field. This mass of cottony fiber is filled with a great amount of granular matter, for the purpose, it may be, of affording sustenance to the young insects within the sack. The young hatch out in this sack, and make their way out into the world through a rent in the soft and tender underside of the sack. The female, after finding her home and during maturity, does not move, although she does not lose her legs, but clings tenaciously with her feet to her support, leaving the body tipped up in the rear and the cottony mass movable in any direction. The male insect was only found during a period of about two weeks from September twenty-fifth. This was the observation of 1881, when I found them in great numbers. I have failed to find the male insect this season. It has a long red body, six legs, and one pair of very long, dark, and transparent wings, prominent eyes, and antennæ very long, and covered with hairs arranged very much as the feathers of a peacock. The antennæ are 16 or 17 jointed. The winged male is easily seen and easily caught, as it moves slowly about, and is not readily disturbed so as to fly away. The female insect lives upon the trunk of the tree and large limbs, and down to the smallest twigs, around which it may be seen clinging in clusters sufficiently great to completely hide the branch; also upon the leaf, along the stem and ribs of which it is fixed, both above and below, although more abundant on the under side of the leaf.



Black Scale.
Lecanium oleæ.

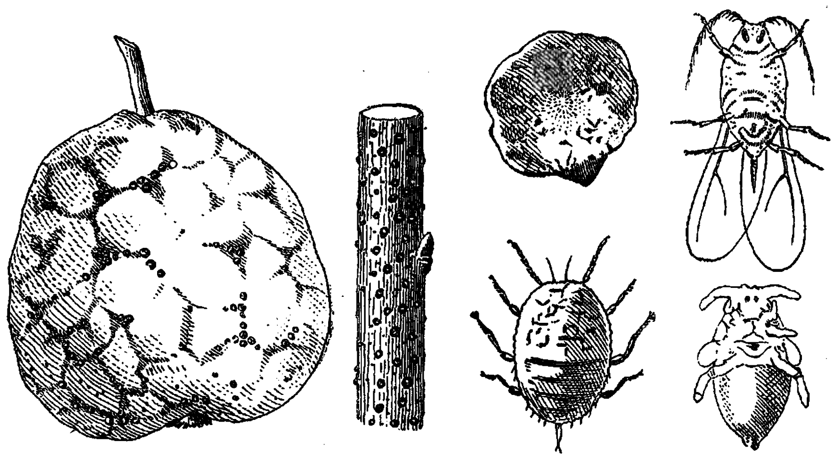
There are three broods of this insect in the season, the first appearing in May, the second in August, and the third in October, or about three months apart. I have just observed (October fifteenth) the mature female with eggs fully grown, and with the young hatched out and crawling in the same sack. In 1881 they rapidly increased from about the first of August, and were continually appearing and still hatching out in December.

Every female, it is estimated, produces from 200 to 500 young. The young will mature and produce a new brood in about three months. Where this scale infests deciduous trees it may be readily destroyed by the application now found to be successful in treating the *Aspidiotus perniciosus* and detailed further on in this report.

Where, however, evergreens are involved, it is a far more serious problem. The best treatment for the *Icerya*, so far found, is that used by Mr. Cooper, of a strong and hot infusion of tobacco, applied by spray as near as may be at 130°.

ASPIDIOTUS PERNICIOSUS.

By far the most injurious scale pest infesting our orchard trees and fruit is the new species of *Aspidiotus*, which, so far as known, originated in San José, and for some years was confined to this locality. It has been known as the San José small, round, black scale, and named by Prof. Comstock *Aspidiotus perniciosus*. The spread of this scale over the State has been gradually taking place, until now it can be found in a number of the fruit-growing counties, notably San Joaquin, El Dorado, Nevada, Placer, Sacramento, Yolo, Solano, Sonoma, Alameda, Santa Cruz, San Benito, and others, and I am told even in Humboldt in the north and in the southern counties. This scale produces terrible results in an orchard when once established. Its ravages have caused widespread alarm, and unless checked soon causes entire destruction of the trees infested. The trees become entirely covered with the scale, so that no portion of the bark can be seen. The fruit also becomes covered in the same manner and is rendered unfit for use. The losses caused by the ravages of this insect cannot be easily computed. Whole orchards are literally destroyed by it. In many cases those who have recognized its presence and destructive power in time have made most strenuous efforts to stay its spread and save their trees, but it has hitherto been, to a great degree, discouraging, owing to the difficulties encountered in fighting an unknown foe. Within the past two years, however, great progress has been made in destroying this insect, and it is now considered certain that we have an efficient means of ridding ourselves of one of the most dangerous pests known to fruit growers.



San José Scale Insect.
Aspidiotus perniciosus.

The trees attacked embrace every kind of deciduous fruit trees except the Black Tartarian cherry, and it is supposed two or three other black cherries. Some varieties are less liable than others to its attacks, but we have found it upon all other trees than those excepted above.

Poplar and other ornamental and shade trees give it a support. It infests hedges of osage orange and the wild cherry, many of which have been destroyed in the past two years and have been dug out. It is found on the currant, and quickly destroys the bush. It has been found upon rhubarb, and tomato plants growing in orchards among infested trees. This scale evidently prefers some varieties of trees, but yet when placed upon others not so well liked, will stay and colonize to some extent.

The effect of this scale insect upon the tree is peculiar. After a short residence there, the green layer of the bark becomes stained a very dark red color, which continues until the death of the limb or tree, unless the insect be killed. The bark may then be restored to its normal color and health.

The damage in Santa Clara County has already become so great as to cause the most serious losses, not alone to the fruit growers, but also to the public at large; and from the orchards affected has greatly lessened the revenue which has been derived from the production and sale of fruit. One instance, stated definitely, will suffice to show these losses.

This orchardist states (1881) that he has 2,000 trees badly infested with scale; 1,000 of these trees are totally destroyed, and will be dug out this season; the balance are badly injured, but can probably be saved. This portion of his orchard, in health, returned at least $5,000 per year. His loss on crop from these trees in 1880 was over $2,000. For 1881 there was a total loss of crop on 1,500 trees. This orchard has regularly paid an interest of 10 per cent on $1,000 per acre. The scale pest alone has caused a loss of $20,000 to the owner.

Further on reference will again be made to this orchard. The Assessor's roll for 1881 reports in this county 335,537 bearing trees of the apple, pear, plum, and peach. This does not include the large number of trees which have been destroyed and are unfruitful; neither the immense number of young trees that have been planted, but not yet paying; and, as observed, it leaves out the large number of other varieties, cherries, almonds, apricots, etc., in bearing, which, it is estimated, would make a grand total of 1,000,000 trees. Should the losses experienced by the orchardists now suffering be carried out to all, you can readily estimate the astounding result. The value of the Santa Clara County fruit crop for 1880 was returned at $976,475, notwithstanding the immense losses incurred. The sworn statement of the Assessor, now before me, says: "That all fruit trees in Santa Clara County are assessed as improvements at the following prices: trees in full bearing, free from scale, $1 50 per tree; trees bearing, affected with scale, from .00 to 50 cents per tree, and that there is a large number of orchards situated east and northeast from the City of San José, badly infested with scale (and after naming some, says), and in consequence are assessed at .00 to 50 cents per tree." From this it will be seen that the revenue derived from taxation is seriously affected by the presence of this pest upon our orchard trees.

The Assessor's roll for 1882 gives of the four varieties of trees named above—apples, peaches, pears, and plums—bearing trees subject to taxation, 280,347, a deduction from the previous year's assessment of 55,190 trees. This loss is, in fact, upon apple, plum, and peach trees, as the young pear trees coming into bearing, and being assessed for the first time, more than equal the loss on that variety. So it is seen that the loss in assessed value on these three kinds of trees totally destroyed has amounted in the one year to $82,785. This is actually but a small part of the loss, as other varieties of trees destroyed, and the losses of previous years from the scale, as well as the reduced value of trees affected but still bearing, cannot well be enumerated. These trees were destroyed before the application of proper remedies; now, however, from the knowledge of correct treatment, these losses will soon cease, and the taxable property of the county be immensely increased. I feel assured that the next assessment will show a decided improvement. Thus the magnitude of this evil becomes apparent, and the problem to be solved is of vast importance.

DESCRIPTION OF THIS PEST.

From the study we have given to this scale during the past three years, it may be briefly described as follows: The scale insect is massed upon the bark of the tree and fruit as well, the scale of a dark gray or blackish and tough material which covers the insect being very small and round in shape over the female, while that covering the male is much smaller and elongated on one side. In both, the higher and central portion of the scale has a yellowish color, and directly under which may be found the insect itself, which is soft and delicate in structure and of a pale straw color. There is no connection between the cover and the insect, which is merely protected by it from harm. The shell-like scale is formed by either the cast-off skins of the larva or by a waxy secretion of the body of the insect. The microscope shows the young female insect oval in shape and flattened.

At first it is very small and hardly perceptible to the naked eye, but careful observation will detect it as a minute yellow dot on the bark of the tree, crawling about with the six legs with which it is provided, and seeking a favorable locality upon which to fix itself for life. It will crawl about for only a day or two, and then fastens itself to the bark by a beak-like proturberance which it inserts, and procures nourishment from juices of the tree. Immediately after fixing itself it begins to be covered with a silvery material, which, as it grows older, is gradually changed in color to a very dark hue, and enlarges to the size of about one sixteenth of an inch in diameter. The insect, soon after fixing itself, loses its legs and antennæ, and thus remains through life, keeping its flattened shape, but growing wrinkled and almost round, gradually increasing in size to perhaps one sixty-fourth of an inch in width, and one fiftieth of an inch in length when full of young. After the young emerge it is dried up and disappears. We have counted from the female, when full of young, between fifty and sixty of the minute sacks which contain the young perfectly formed insects ready to crawl about. The young male insect is produced in the same manner and at the same time, though not in such numbers—perhaps half a dozen males to a hundred females. In size, the male is about one third that of the female, and in shape very different, being elongated and more angular; provided with six legs, placed differently upon the body, with two antennæ and two eyes, and with a teat-like protuberance at the rear end of the body, ending with a point.

At this stage of its existence the male has no wings, and it cannot be discerned without the aid of a magnifying glass. The color of the young male is not a yellow, but of a steel-like or whitish hue. It crawls about and fixes itself upon the bark, as does the young female, and becomes covered with a scale in the same manner, but which is elongated upon one side, and not more than one half the size of the scale of the female. The male, after remaining its allotted time in the pupa state, emerges as a fully developed insect, having eyes, antennæ, six legs, and one pair of very long wings of a reddish and transparent appearance, and the protuberance at the rear end of the body is developed into a very long tapering point, nearly as long as the body itself. The perfect winged male is so minute it can with great difficulty be discerned by the naked eye, crawling and flying about in search of the female, which it impregnates under the scale, and then, having fulfilled its mission, dies.

In the season of 1880 we saw the winged males first appear on March twenty-third, and in great numbers for a few days. The first brood of young scales appeared the latter part of April. On June twenty-seventh we found the males from the first brood under the scales and nearly developed with appendages and wing pads, and on July second large numbers of them flying about; also, as late as July twenty-fifth, and still later, on August second, a few were seen. On July twenty-third, the trees were covered with the young of the second brood. August second the young males of the second brood were found crawling about. Bark scraped clean on the twenty-third of July was found on the twenty-fifth alive with young insects, and some of them already commencing to be covered with scale. As it was expected at the time these observations were made, a third brood would appear about October, so we found it. On October seventeenth we found the male scale insect in the first pupa stage of development in the winged form, and also, on the same day, found the perfect winged insect of the third brood moving about on the tree.

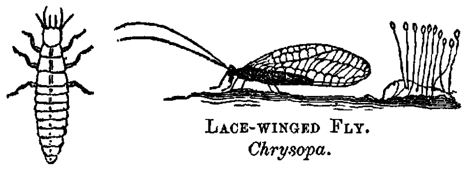
These facts prove conclusively that there are three distinct broods of these insects in the season, the earliest portion of the first brood about March twenty-third, of the second brood about July second, and of the third brood about October seventeenth, there being apparently an interval of fourteen to fifteen weeks between the different broods of the season. The young female insects were found crawling about through the season, and as late as the last of November. The last brood remains through the Winter under the scale until the approach of warm weather in the Spring, when they again appear.

While the *Aspidiotus conchiformis* will develop but one, or at most two broods per season, this new species of *Aspidiotus* will produce three broods, and each female probably fifty young. This present season of 1882 has been, in the development of fruit and insects, about three weeks or more later than usual, consequently the appearance of the scale was not expected as early as last year. The first winged male scale insects of this species were discovered this year on April twenty-fifth, crawling about on an English hawthorn tree. At that time no young female scale insects were to be found, but the old females under the scales were approaching maturity, and in due time the young appeared.

FOES OF SCALE INSECTS.

The natural enemies of the scale insects are the larvæ of some varieties of the *Coccinellidæ*, or lady-birds.

The season of 1881 developed in great numbers an important enemy of the scale, viz.: the *Chrysopa* or lace-winged fly, the larvæ of which prey upon it. This is a beautiful, slender, and delicate fly, bright green in color, with large golden eyes, and very long wings like lace. The eggs are very minute, white, and oval in shape, and are attached by a long and slender pedicle to the underside of leaves or the fruit. The larvæ is about one quarter of an inch long, slender, and tapering from the middle toward both ends. It is provided with jaws, each perforated, through which it sucks the juice of its victim.


Lace-winged Fly.
Chrysopa.

REMEDIES FOR SCALE INSECTS.

In 1881 Mr. J. H. M. Townsend, of the Santa Clara County Horticultural Society, kindly placed at our disposal a large number of trees infested with scale *Aspidiotus perniciosus*, for the use of the committee in making such experiments as were desired. A series of careful experiments for the destruction of the scale pest were made and the results carefully noted. Other experiments had been under way in our own orchards for many months.

These experiments demonstrated on one hand the inefficiency of many applications, and on the other hand showed a certain means for the destruction of the scale insect. The remedies which have proven successful will destroy all the varieties of scale, as the one under treatment is the most difficult of all to overcome. A portion of these experiments are numbered, and the results obtained, stated as observed, at different dates up to this time, October, 1882.

No. 1. Concentrated lye of the American Lye Company, one pound; water, two gallons. February 22, 1881—Applied by spray upon two peach trees infested by scale; washed in the afternoon when the trees were dry; effect, scale killed; the tenderest wood was killed also. July 5, 1881—New wood grown over the trees four and five feet long.

No. 2. Concentrated lye, one pound; water, two gallons. March 10, 1881—Applied by spray upon two peach trees infested by scale, washed in the morning when the trees were damp with dew. July 5, 1881—Scale killed; buds and twigs not injured; fruit abundant and trees most healthy.

No. 3. Concentrated lye, one and one half pounds; water, one gallon, June 23, 1881—Applied by pouring from a dipper upon two pear trees infested with scale and with numerous limbs dead. Lye so strong as to burn bark and foliage. August 2, 1881—Scale entirely destroyed; bark being restored and new foliage appearing.

No. 4. Concentrated lye, one pound; water, one gallon. July 5, 1881—Applied by spray upon a large apple tree badly infested by scale; bark and leaves burned. August 2, 1881—Scale killed; green layer of bark being rapidly restored, and new leaves and blossoms appearing all over the tree. The foregoing trees have since been mostly killed by the application of a low grade of coal oil.

No. 5. Concentrated lye, one pound; water, one gallon. February, 1881—One almond tree, one Easter Beurre pear tree, and two apple trees, grafted, were washed by brush with this strength of lye, in order to destroy the red spider and its eggs, which could not be destroyed by previous applications of lye, one pound to five gallons, and also one pound to three gallons; another and the main reason being to ascertain the effects of very strong lye upon the trees. No scale upon these trees. This application destroyed the red spider and its eggs on these trees so that it did not appear for months; but, however, later on the trees became again infested. While the strong lye will destroy a large number of the eggs of the red spider, it is found that all cannot be reached. The effect upon the bark and health of these trees was wonderfully good, the bark being very smooth and having a bright green velvety appearance, and totally free from all moss or other parasite.

No. 6. Concentrated lye, one pound; water, one gallon. The experiments in this number were made upon a section of orchard in a square block, comprising three hundred and fifty-seven Ickworth plum trees, cut down and grafted into Petite prune; some yearling prune trees having been put in in places and washed as were the plums. Of these, one hundred and twenty-six trees were washed in February, 1881, with the above strong lye, applied with a brush. Among the three hundred and fifty-seven trees were eight trees badly infested with scale. No others had any scale upon them. The infested trees were scattered about as follows, and washed as indicated:

No. 10 in first row, and 4 in eleventh row were washed with lye, one pound to three gallons of water. The effect was not quite sufficient to completely destroy the scale, though so injured that they did not breed. Afterward these two trees were washed with one pound to one gallon, and this effectually ended the scale. No. 7 in sixth row, 10 in seventh row, 11 in twelfth row, 8 in fourteenth row, 3 in seventeenth row, and 11 in seventeenth row, were washed with lye, one pound to one gallon of water, with the effect of completely destroying every scale upon them, and not one has appeared upon any of these trees since that time. These trees have been in the finest possible condition from the time of this application.

Among the trees not washed with the strong lye, two were found in June, 1882, to have scale upon them; one of these, the top having become badly broken by wind, was dug out and burned; the other was washed soon as discovered with the whale oil soap and sulphur mixture; owing to the foliage upon the tree, not every part of it could be touched. Yet, however, the scale was destroyed, so far as could be found.

No. 7. Concentrated lye, one pound to one and one half gallons water. Five Bartlett pear trees obtained from the nursery and planted in 1881 and scattered among a considerable number, although carefully examined at the time for scale, were found in June, 1881, to have a few scales upon them. These were at once washed with the above strength of lye, which destroyed the scale completely upon three of these trees, so that none subsequently appeared. On two of them, however, a live scale or two must have remained on the trunk of the tree, at the surface of the ground, untouched by the lye, as in September following a few young scales were discovered, located close to the ground. These were again washed in the same manner. Since that washing no scale has been found upon either of these trees until this month (October 16, 1882). On one of them has been found a few young scale. The tree was immediately washed with the whale oil soap and sulphur mixture. On another Bartlett pear tree, not, however, numbered with the above, was found some scales, November 7, 1881. This tree, being entirely dormant, was washed with lye, one pound to one gallon water, completely destroying the scale, as none can be found on it this year. Among the Yellow Egg plum trees, one was found January, 1882, with scale upon it, and washed at once with lye, one pound to one gallon water, and repeated in February. No scale were left, as none can be found at this date. Another Egg plum tree was found infested in June of this year. To this was applied, by a brush, the whale oil soap and sulphur mixture, with some lye added. No scale can now be found upon it.

The trees in experiments five, six, and seven, are in an orchard of fifty acres. I have constantly and carefully watched all these trees, and at this date no scale can be discovered in the entire orchard. Should any hereafter appear, the treatment will be by lye, one pound to one gallon of water. With this success in my two years' individual practice, I feel justified in repeating the statement I made at the first State Fruit Growers' Convention, that young orchards can be kept free from the *Aspidiotus perniciosus* by the right use of concentrated lye as a Winter wash, and the whale oil soap and sulphur mixture for Summer.

In the following experiments, the trees were all badly infested with scale:

8. Concentrated lye, one and one half pounds; water, one gallon. June 24, 1881—Applied to two Clairgeau pear trees; brush used in order to save foliage; many limbs dead from effects of scale. June 27—Trees burned considerably; scale killed where reached. July 2—Much of the bark showing a healthier appearance. July 23—Trees still better. August 2—No sign of scale; green layer of bark being restored very rapidly; the fruit quite clean, because no scales of second brood were upon it. April 25, 1882—Examined the trees, and found a very healthy top, and with new bark where burned with the lye when washed in the Summer. All the surface was not touched by the lye, and where not washed, the scales still existed. Wherever the bark was washed, owing to the time that it was done, it was cracked across. Yet underneath this cracked surface was found new and healthy bark. October 14, 1882—There has been a good growth of new wood this season, and the under bark has maintained its fresh and healthy appearance over entire tree.

9. Concentrated lye, one and a half pounds; water, one gallon. June 24, 1881—Applied on a portion of tree to ascertain the effect upon the stain of bark. July 23—The bark where washed shows much less stain; lighter in color, and the green layer being restored. August 2—Stain rapidly disappearing.

10. Concentrated lye, one pound; water, one gallon. July 5, 1881—Mixed accurately, and applied same day upon pear tree. July 23—Scale, where reached, entirely destroyed; bark burned by the lye, but otherwise healthy and good where it was previously sound. April 25, 1882, and October 14, 1882—Observations nearly the same as in the preceding number, the bark under the cracked outer layer being all renewed, and with a bright, healthy, green layer free from stain; free growth of new wood during the season.

11. Concentrated lye, one pound; water, one and one half gallons. Tree washed same time as above and with about the same results, although an unthrifty tree. October 14, 1882—The tree had been

pretty well destroyed by the scale last year, and shows but a little growth of new wood.

12. Concentrated lye, one pound; water, two gallons. Same as above, except that the tree was still more thoroughly ruined by scale, and at this date has not recovered; but little new wood; what there is, however, being healthy.

No. 13. Concentrated lye, one pound; water, three gallons. This tree had been washed by spraying, April 1, 1881, with this strength of lye, which proved too weak to destroy the scale. July 23, 1881—Young scale insects covered the tree; the tree was left to itself with that washing. April 25, 1882—Observed that the scale was abundant and fast accomplishing the destruction of the tree. October 14, 1882—The tree is dead to within one foot of the ground, but from the collar many new sprouts have grown.

No. 14. Concentrated lye, one pound; water, five gallons. June 23, 1881—Applied to two trees, one slightly and the other badly infested with scale. This wash was used by pouring it upon the trunk of the trees, and allowing it to run down and soak into the ground; the tops of the trees were not touched. This experiment was made, as it had been publicly stated that this weak lye used in this manner was an effectual remedy. July 2, 1881—No effect produced upon the scale where not reached by the lye. August 2, 1881—No effect other than noticed above; scale only injured where touched by the lye, and second brood of young scale insects crawling all over the tops of the trees. April 25, 1882—Trunk quite clean and healthy, but the top full of scale insects of the last season alive and approaching maturity. October 14, 1882—Tree covered with scale, old and young; the trunk, however, where washed, appearing far more free than the upper portion; the bark where washed is healthy.

Use of Kerosene.—In the following experiments with kerosene, the action of that agent was reported as it *then* appeared at the date of report, but the subsequent effects, which will now be stated, show how important it is to allow ample time to elapse before coming to a conclusion upon the merits or demerits of a particular proposed remedy. The use of coal oil when the tree is full of sap is plainly shown to be unallowable. These will be detailed as they appeared at the time, and also as seen this season:

No. 15. Kerosene, low grade and heavy, 110 test. June 1, 1881—Applied to two pear trees, spraying, with coarse spray used and oil thrown over the entire trees. June 27, 1881—Observed that the foliage had been killed and the trees considerably affected; scale killed. July 2, 1881—New leaf buds coming out. July 23, 1881—New foliage all over the trees, and seemingly new vigor throughout; new shoots six inches long; no scale to be found, and the green layer of the bark healthy to all appearance. August 2—Foliage increasing rapidly all over the trees, and, apparently, the trees were gaining in health. Thus they appeared up to August, 1881. The observation of these trees on April 25, 1882, showed a very different state; the trees were dead.

No. 16. Kerosene, high grade, 150 test. June 1, 1881—Applied by spray upon two pear trees. June 27, 1881—Observed that the foliage had not been killed, but that the scale had all been destroyed; the trees apparently uninjured. July 2—New leaf buds coming forth. August 2, 1881—Trees appeared healthy; foliage uninjured; scale showing no signs of its presence, and the fruit showing less effects from scale on account of the wash it had received. April 25, 1882—Trees were dead.

No. 17. Kerosene, high grade Diamond brand, 150 test. July 27, 1881—Applied upon two pear trees with a coarse heavy spray over entire trees; trees very badly infested. August 2—Effectually destroyed the scale; the trees and foliage apparently entirely healthy. No perceptible effect upon the trees, but completely drying up the scales, so that they are blown away by the wind. The fruit is not affected by the kerosene, but the scale upon it is killed, and the fruit is very clean. It is observed that kerosene of 150 test evaporates rapidly, and leaves but little signs of having been applied. April 25, 1882—One tree dead; the other not dead, but nearly so. October 14, 1882—Examination showed trees to be dead.

No. 18. Kerosene, same brand, July 27, 1881—Applied upon a pear tree by spray atomizer, which produced a very fine mist only. August 2, 1881—The same effects produced as in No. 17; scale appeared to be entirely destroyed; no apparent effect upon tree or foliage. April 25, 1882—Tree not dead, but with many scales upon it. October 14, 1882—Old wood dead, but new wood from near the ground.

No. 19. Gasoline. July 27, 1881—Applied upon pear tree by heavy syringe spray thoroughly over the tree and foliage. August 2, 1881—Not effectual in destroying the scale; too volatile; many of the insects killed but a large proportion unaffected; no apparent effect upon the tree or foliage at that time; on this tree, the young male scales, just hatched out, were found crawling about. April 25, 1882—The tree has been almost killed by the scale infesting it. October 14, 1882—Tree still alive, with some scale upon it.

No. 20. Gasoline. July 27, 1881—Applied upon pear tree by the spray atomizer. August 2—Results same as the preceding. October 14, 1882—This tree did not suffer from the effects of the application, but this season has made a vigorous growth of new wood quite clean from scale. The foregoing applications of kerosene and gasoline were made in full strength.

No. 21. Whale oil soap and sulphur mixture, one pound; water, one gallon. June 23, 1881—Applied by spray over pear tree, covering foliage and fruit thoroughly. July 23—Scale killed; tree gaining in health, green layer of bark being restored; fruit greatly improved in appearance. August 2, 1881—Tree still improving, also fruit. April 28, 1882—Tree very healthy and appears clean from scale; green layer of bark being fully restored, and parts of the tree that were nearly killed by the scale are forming new bark rapidly; the tree has a very fine top of new growth. October 14, 1882—The tree has grown very thriftily through the season, and the wood is all very healthy; some scale are found upon the tree, however. These trees are in an orchard badly infested, and it is to be expected that the insects will return. This wash is an effectual Summer wash, and where there is any scale present should be used in the strength here given, as a wash of one half the strength has proven ineffectual.

No. 22. Soft soap, one pound; sulphur, one pound; tobacco, one pound; water, three gallons. July 5, 1881—Applied upon two trees by spray, covering trees, foliage, and fruit, thoroughly. July 23, 1881—Seemed quite effectual at the time; many scale destroyed, but not all; trees not affected by the wash; fruit improved in appearance. Subsequent observations, however, showed that but little was accomplished in destroying the scale. October 14, 1882—This tree shows an abundance of live scale in all stages of growth. This wash was used with good effect in another orchard, June 1, 1881, on a Fellenberg prune tree, clearing it from scale, which, up to this time, have not returned.

No. 23. Soft soap, one pound; sulphur, one pound; water, three gallons.

No. 24. Soft soap, one pound; water, three gallons. The two washes named above were applied June 23, 1881, and with no effect, neither has it shown any result this season.

No. 25. Whale oil, one pint; kerosene, one pint; borax, one ounce; water, one gallon. June 23, 1881—Applied by spray to a pear tree. At the different dates in 1881, when the effect has been observed, it has been apparent that the oil is decidedly injurious to the tree, applied in this manner or at this time; it is therefore not recommended. Applied to another tree in one fifth the strength above given, it has no effect upon either scale or tree. April 25, 1882—The tree first treated is nearly dead, but, however, having the top cut off, new wood is coming along; scale appears to be destroyed. October 14, 1882—The old wood is dead; the sickly growth of new wood springing out from the lower portion of the tree shows some scale.

No. 26. Carbolic acid, three ounces; water, two gallons. June 23, 1881—Applied by spray upon a pear tree badly infested with scale. June 27, 1881—Failed entirely. This tree afforded a constant succession of insects in all stages of development, both male and female. From it some of our most interesting studies were made; we report it as it appeared at each visit. On that date (June 27, 1881) we found the male insect under its scale partially developed, with wing pads, but wings not yet out. July 2—Found plenty of winged males of the second brood flying and crawling about. July 23—Tree was covered with young female scale insects of the second brood crawling, and with a few of them just located and commencing to be covered with their scale. July 25—A few of the winged male still found; bark scraped clean on this date was in two days covered with young scale insects, and with a slight formation of scale over them. August 2—Tree entirely covered with young scale on this date; two or three winged males were found. April 25, 1882—Tree almost dead from effects of scale; top dead and removed, and a few feeble shoots coming forth. October 14, 1882—Shoots have grown from the trunk of the tree to some extent, but the whole having been so seriously affected, the tree is considered worthless.

The entire orchard in which these trees are situated, other than the ones experimented on—from eight to twenty-six—were washed this past Winter with a very low grade of coal oil called "tree wash;" the result is not satisfactory; the owner tells me (October 14, 1882) that he is satisfied that the oil has seriously injured his trees.

EXPERIMENTS WITH STEAM.

It was at one time thought that steam might be effectually applied for the extermination of insect pest upon trees. In the Summer of 1881 a test of this agent was made in an orchard near San José. A large tent was made to hang upon a frame, which could be run on either side of and overhanging the tree; the tent then being dropped, the tree was entirely inclosed in an air-tight bag, into which the steam and other ingredients were forced, and left to act upon the tree and insects as long as was thought necessary.

Horticultural Commissioner D. C. Vestal and myself carefully noted the experiments made, and placed the results upon record. These experiments are also numbered for convenience in describing.

No. 1. September 8, 1881—An apple tree infested with scale insect, woolly aphis, and other pests, was covered by the tent, under which was hung upon the tree cloths saturated with bisulphide carbon, one half pound. It was thus left for three fourths of an hour, and then the tent was removed. Result, apparently of no effect. The woolly aphis was not injured, but found crawling about. The red spider was found crawling about; also a small caterpillar was observed unharmed. The scale insects were not affected in any way, so far as could be observed. September 12, 1881—Examination made on this date showed that no effect had been made by the application upon any of the insects mentioned as infesting this tree. Mr. J. H. Wheeler, the maker of the bisulphide carbon, thought that the agent had not been properly brought into contact with the insects, and for that reason failed to destroy them.

No. 2. A pear tree was treated with steam forced under the tent covering the tree. The temperature was raised to 165°, and maintained for ten minutes. Observations immediately afterwards showed that the foliage of the tree, and the young wood of the tree, were destroyed. Everything was cooked thoroughly. September twelfth, the tree and the scale were both killed.

No. 3. An apple tree was treated in the same manner, with steam at 140°, for three minutes, and afterwards with sulphur fumes (caused by putting two handfuls of sulphur upon live coals) for five minutes. The result showed that the tree did not appear quite so much injured at this time as the preceding tree at first showed, but as seen on September twelfth the effect was the same. The scale was killed, and also the entire tree, except the oldest part of the trunk.

No. 4. Apple tree steamed for five minutes at 140°; dried for five minutes, and then fumed with sulphur for five minutes. Result the same as the preceding.

No. 5. Apple tree moderately covered with scale and woolly aphis. Steam applied with which had previously been mixed three gallons of kerosene, pumped into the boiler of a thrashing engine. This application was made at 110° and maintained for four minutes. September 12—No effect was perceptible upon the tree, except that the foliage was somewhat injured. The scale insect was not killed or even injured. The woolly aphis was found alive and uninjured.

No. 6. Steam and coal oil applied four minutes at 140°. September 12—Tree pretty nearly killed. Only the oldest wood alive—all new wood and buds killed.

No. 7. Steam and coal oil for six minutes at 130°; No. 8, same for six minutes at 150°; No. 9, same for twelve minutes at 120° to 130°. This tree was steamed four minutes, and then, after an interval of six minutes, was steamed two minutes more. September 12—The result upon these trees was the same. The trees were all destroyed excepting the trunk and oldest wood.

From these experiments it will be seen that steam cannot be applied in such manner and at a temperature sufficiently high to destroy the insects without, at the same time, destroying the tree.

During the season of 1881 strong efforts were made to introduce the use of various patent mixtures, which were claimed to have great merit in destroying the scale insect. One of these was to be used by simply spreading it on the trunk of the tree, which application it was stated would, through the poisoning of the sap, kill the insects. This, as well as others of a like nature, were given careful consideration and tested, and resulted in entire failure.

Another method, which was persistently forced upon the public, was that of boring into the trunk of the tree to the center, and filling the auger hole with the so called cure. A careful investigation of many trees so treated was made by Mr. Matthew Cooke, Mr. D. C. Vestal, and myself, for the purpose of determining the actual effects, if any, of this treatment. October 17, 1881, we visited the orchard of one person who had allowed his name to be used in recommending this exterminator, and first examined two pear trees bored and the holes filled with the preparation. These trees were found to be covered with live scale insects in all stages of development, and showing no signs of injury. The young female insects were found crawling about the trees in great numbers. The wood, the season's growth, was covered with scale. An apple tree, the trunk and large limbs of which had been washed the previous Winter with strong lye, showed that the scale, which completely covered it when the lye was applied, were entirely destroyed where the wash had reached, but on the smaller wood, which had not been washed with the lye, the scale was found alive. This tree had also been bored and treated with the application referred to, and which had no effect whatever. On the trunk of this tree, where the lye had been applied, the green layer of bark was found replacing the old, which had nearly been destroyed by the scale.

At another place we examined a pear tree which had been bored and treated with this preparation. This tree was in no manner whatever affected by this so called remedy, but was completely covered with scale insects in every stage. We found the young females crawling about, and on this tree was found the male scale in the first pupa stage of development for the third winged brood, and also on this tree was discovered the perfect winged male of the third brood. In no case has the slightest good resulted from these secret and patented preparations. We have treated this subject thus fully, because, to our knowledge, prominent and careful horticulturists have been induced to purchase these things at an exorbitant charge. The treatment of trees by crude petroleum and its different products has been thoroughly tried in this vicinity, and, it must be confessed, with conflicting results. Some still claim that coal oil is efficacious, and if properly used, safe; but the advocates of this practice are very few now, although at one time, orchardists were pretty evenly divided in the use of coal oil on the one hand, and that of concentrated lye on the other. The treatment of orchards by crude petroleum was commenced in 1879–80, but was not extensively tried until 1880–81. Many orchards were then drenched with crude petroleum, greatly to the regret of the users. The following season the advocates of coal oil abandoned the use of the crude, and applied a partially refined product which is little better. This is called "tree wash," and was used this past season very extensively.

This whole subject may be treated as with one agent. Many orchards have been visited where this treatment has been adopted, and where the result has been disastrous. One prominent orchardist used the "tree wash" upon about twenty acres of all varieties of trees, and has lost almost the entire number. A great part of the dead trees have this season been dug out. Another used this wash upon sixty fine cherry trees, ten years old, killing them all. Another, adjoining the last named, washed with the same, and killed one hundred and twenty-five choice cherry trees. Another had used crude petroleum, with the result of killing all his trees except apples and pears, which partially rallied and put forth a sickly new growth. These results can be substantiated by many other orchardists who have met with a greater or less degree of loss from the use of oil, and almost every person who has been in favor of using coal oil has abandoned its advocacy. Indeed, I now know of but one orchard where it is the intention to apply it again. This one, from some cause, appears not to have suffered from its use, and a visit to this orchard on the fourteenth of October showed a very large and fine crop of apples being gathered which were almost free from scale. This orchard, belonging to father and son—the Messrs. L.—has been washed in the following manner: In 1879–80 some trees were treated with kerosene of 150 test. In 1880–81 crude petroleum was applied to the trees of the entire orchard. These were principally apple trees, numbering about six hundred, although there were trees of every other variety. In 1881–82 the tree wash was applied to the same trees and in the same manner. As stated, this orchard is almost free from scale, and the trees appear healthy. The Messrs. L. attribute their success with coal oil to the following means of procedure. It is applied in the middle of the Winter, or before the sap begins to flow. It is applied in the finest possible spray, and is not allowed to touch any part but once. The work is done when there is no wind, and when there is no moisture upon the tree. All this evidence leads to the conclusion that the products of petroleum are most hazardous to the life of the tree, and while one or two may not experience the loss of their orchards, the hundreds of others would destroy their trees. Therefore, with all this added experience before me, I most emphatically condemn the use of petroleum or refined coal oil of any grade for the purpose of an insecticide.

The effect of coal oil upon trees of all varieties of stone fruits is particularly disastrous, being less upon apples and pears. I now again refer to the use of concentrated lye, which, as before seen in this report, has been of such signal service, and which I consider to be the specific, or at least so far as we now know, the best means of destroying the scale insects of deciduous trees. In the case under consideration where the *Aspidiotus perniciosus* is involved, no other application will do the work as well, as a Winter remedy which can be used when the tree is denuded of foliage and when the tree is dormant. The lye, while causing little if any harm, but on the other hand in most cases positive benefit to the tree, is, where used with care and in the proper strength, an effectual remedy. The only other remedy which can be recommended is the whale oil soap and sulphur mixture (codlin moth wash), which is applicable as a Summer wash particularly.

A few prominent examples of the employment of lye on a large scale will be given to show its usefulness and success. Great results had been obtained by the application of concentrated lye, but the definite strength in which it should be used was only determined in the season of 1881, consequently the past Winter preparations were made for applying it on a large scale to entire orchards. In the early part of this paper reference was made to the losses of one orchardist, Mr. T., as an instance to illustrate the condition of many orchards in this vicinity. The orchard was visited a few days since (October 14, 1882), and a vast improvement noted in the health and appearance of the trees, which had by careful treatment been made to survive the devastating effects of the scale.

As was before stated, many of the trees destroyed had been dug out. These were particularly apple trees. Some, however, had survived, though badly injured. These being heavily cut back had put forth a new growth, which is this year most satisfactory. The pear and plum trees, especially, have shown the good effects of treatment, and are now vigorous and on the way to great fruitfulness. Owing to the fruit spurs and all small wood of the pears being killed by the scale two years ago, there could be but little fruit this year, but from the fine thrifty growth on these trees a large crop of fine fruit is promised for the coming season. The plum trees, of which there is a large number, have made a fine recovery from the effects of the scale, and yielded this year a valuable crop of fruit, obtaining of French prunes at the rate of eight tons to the acre of fresh fruit. The total yield of fruit this season exceeded in value that of the last by a large percentage. The fruit has been of fine quality and very clean. At least 90 per cent of the total yield has been entirely free from scale, and of the 10 per cent remaining none of that was as bad as the fruit of the entire crop of last season. The coming season he expects to have a very large crop of fine and perfectly clean fruit. Mr. T. has used both oil and concentrated lye on his trees, not, however, together, but separately. He says he shall not use oil again, as he is satisfied that it injures his trees. Lye has given him his fine results. It has been used in the strength of about one pound to two and a half gallons water, but in this strength it has required a longer time and a larger number of applications to destroy the scale. Although some scale is still to be found there, the orchard is nearly cleaned of the pest. It is intended to use lye and the caustic soda the coming Winter.

Another extensive orchard near to the above, belonging to Mr. R., has been thoroughly treated by concentrated lye. This orchard of thirty acres, in which are 5,000 trees, has been one of the worst infested by scale. Last Winter the entire orchard was drenched by lye, applied by fine spray in the strength of one pound to one gallon water, and one pound three ounces to one gallon water—some few trees with even a stronger solution. This application was made from December, 1881, to February, 1882. A visit made on April twenty-fifth last, showed the scale to be pretty thoroughly destroyed. The trees, at this date, were in a most vigorous and healthy condition, with beautiful green foliage, and hanging full of fruit, well set in all varieties, far enough advanced at the time. Other trees were in full blossom at that time. On October sixteenth I again visited this orchard, to ascertain the season's results, and found it had borne out the estimate made of it in April last. The growth of wood has been very fine and healthy. The crop of fruit has been good this season, and has been almost entirely clean. The cherries were entirely so. The plums and prunes, of which there was an immense crop on about 1,200 trees, were also wholly free from scale. Also, the pears and apples were, most of them, clear of scale, though a few were slightly infested. Some scale remains in this orchard, but so little compared to last season that, although the quantity of fruit was about the same, the quality was far superior, and therefore in value far greater. A portion of the pear trees, which still showed some few scattering scale, were washed in September with a solution of lye, showing four degrees by the lyeometer, in which was mixed sulphur, as much as could be forced through a coarse nozzle, and whale oil soap in small quantity. This has apparently cleared away the few scale that were present. It is intended to wash with lye the coming Winter, in the same manner as last, wherever it may be required.

Another prominent example of the use of lye is that upon the orchard of Mr. G., in the celebrated fruit growing locality known as the Willows, San José. This orchard is chiefly devoted to the culture of the cherry, and is one of the best known in the State for that product. There are also a few hundred French prune trees. All of these trees, both cherry and prune, range in age up to fifteen years. Two years ago the *Aspidiotus perniciosus* appeared on the white cherries, nearly destroying a number of trees. In the Winter of 1880–81 the trees were washed with concentrated lye, one pound to five gallons of water. It resulted in some good, but did not kill many insects. In January, 1882, with the exception of one tree mentioned further along, the entire orchard was washed with concentrated lye, one pound to one gallon of water. All varieties of trees subject to scale were washed twice—the applications being made two weeks apart. The method employed was by heavy spray continued upon the tree from five to twenty minutes for each tree. The fluid dripped from the tree upon a table arranged under it, and thus saving the material from waste. October fourteenth I examined this orchard. On the cherry trees all of the scale has been destroyed upon almost the whole of the trees washed. On a few trees, however, there are at this time a few scale to be found, bred from some not reached by the wash. The effect upon the cherry trees was not injurious, except that a few fruit spurs were killed. The trees this year bore a very fine crop of fruit, wholly free from scale. Not a single specimen of scale could be found upon any of the fruit, as a careful inspection was made of it for that purpose. The effect upon the prune trees was a little greater, killing a larger number of fruit spurs. This is partly attributed to the state of the atmosphere, as it was warm and dry when these were washed. Not a scale insect can now be found upon any of these trees, although very large trees and very badly infested with scale. Mr. G. intends to wash his trees the coming Winter with lye in the strength of one pound to two gallons of water, using also the table as before. The saving caused by this was at least two thirds of the material.

THE DRAIN TABLE.

The table is made of sheet and zinc, fixed upon a frame in halves, which are placed against the trunk of the tree on either side, thus forming a circular basin fourteen feet in diameter, and requiring but one minute for transfer from one tree to another.

AN INSULATED TREE ATTACKED.

The tree mentioned as not being washed was a Cleveland Bigarreau cherry, standing in the orchard one hundred yards from any tree infested, being surrounded by the Black Tartarian trees, which are never infested. This tree last Winter, at the time of washing the orchard, had no scale upon it. Now, however (October fourteenth), I find this tree covered with scale already matured, as well as many young crawling about upon it. This is an interesting observation, as it shows the rapidity with which a tree may become covered with this pest, and also that the scale will single out and colonize itself upon trees to its taste. In this orchard no cherry of the black varieties has been infested. The Black Tartarian, the Black Bigarreau, Knight's Early Black, the Black Eagle, and the Early Purple Guigne, are none of them troubled; and neither has the Belle d'Orleans shown any insects. The white varieties of cherries are among the worst infested trees we have.

CAUSTIC SODA.

Some orchards have also been washed with the English caustic soda. One stated to me that he had used it upon his entire orchard of all varieties of trees, mostly, however, Newtown Pippin apples, in the strength of ten degrees by the lyeometer. It was not used in this case for the purpose of destroying scale, for the orchard was free from it, excepting some of the *Aspidiotus conchiformis*, which it destroyed. The object was to clean the trees of moss, and also to kill the red spider. The trees were cleaned, and a large porportion of the red spider eggs killed, but not all by any means. This caustic soda is obtained in large drums of six hundred pounds, and is somewhat cheaper than the concentrated lye, which fact may cause its more frequent use hereafter. Many other instances might be cited to show the efficacy of lye as an insecticide, but sufficient facts are stated.

HOW THE INSECTS ARE SPREAD.

Attention must be called to the means of spreading this serious pest, the *Aspidiotus perniciosus*. The system of "return boxes," and packages of any character, is known to be pernicious and a fruitful source of the spread of all kinds of noxious insects, which, either as insects, eggs, or larvæ, are fastened to them and taken into the orchard, to be developed in due time, and then to spread devastation to everything attacked. Indeed, to me, so obnoxious is the return box, that I will not permit one to be brought into the orchard or on the premises. I prefer to pay the cost of new boxes, and give them with the fruit sold. As the female insect has no wings, she can, of course, only be spread about by becoming attached to something by which she is carried to different localities, and by crawling about during the short period after hatching, before becoming fixed for life.

Birds will carry them most frequently about an orchard, and it is thought that one source of danger is little regarded, viz.: carrying them about on one's clothing by brushing against infested trees.

If boxes or packages are returned, they should be disinfected as soon as received, by dipping in boiling water, to which is added not less than one pound of potash to twenty-five gallons of the water used.

The nursery trees sent over the State have been the means of spreading the scale extensively, and while nurserymen are anxious to make sale of their trees, they must take every precaution to see that their patrons do not suffer, by neglect to first destroy the scale, which may be done by dipping the trees in a solution of concentrated lye of one pound to two gallons of water. I am glad to say that most nurserymen are desirous to do all in their power to destroy the scale.

Among other means of preventing the spread of scale, thorough and constant cultivation of an orchard should be kept up. One prominent difficulty in the way of eradicating the scale I believe to be the practice so prevalent of growing other small crops in the orchard between the trees.

It cannot be too strongly impressed upon the mind of every owner of an orchard that he must personally watch his orchard and exercise such constant supervision that no infested tree shall escape observation, and, when found, the proper remedy at once be applied. In the orchard referred to where chance trees have been found infested, no other course would have saved me from the overwhelming spread of the scale.

The experiments of 1881 and the subsequent use of lye in instances mentioned, indicate the remedy. This should always be used when the tree is dormant, and when the foliage has disappeared from the trees. In our climate that time is the Winter, and at any time before the trees put forth their buds.

APPLYING THE LYE.

The strength of lye should be one pound to one gallon of water, where trees are infested with scale. Where it is only desired to cleanse the tree from moss, one pound to three or four gallons of water is sufficient. The best method of applying the concentrated lye is by dissolving in boiling water, and throwing it upon the trees with a force pump through forty or fifty feet of one half-inch rubber hose, to which is attached a nozzle, having for its opening a simple straight slit, very narrow in width, and one sixteenth to one eighth of an inch long. The best spray tip yet devised is that made at San José, called the Merigot Spray Nozzle. The pumps most used for this purpose are the Gould pump and the Merigot pump. The latter is made at San José, and is cheaper than the Gould pump. Great care should be taken to cover the tree entirely with the solution of lye, as upon its thorough application depends its success.

One of the greatest difficulties in the use of strong materials is from the spray falling upon the person of the operator, and burning and injuring the skin. In order to overcome this obstacle, I have devised a simple "extension nozzle" of slight cost, which is very light, and which may be made of any length desired, say from four to fifteen feet, or even longer. By the use of this extension, it is perfectly easy to reach and spray any orchard tree without danger and discomfort. The cost of materials and apparatus may be given as follows: The Gould pump costs about sixteen dollars, without accessories; the Merigot pump, twelve dollars. The suction hose and the long hose will cost, according to quality used, from fifteen to twenty-five cents per foot.

The Merigot spray tip, if purchased alone, $1 50. If bought with pump, the pump and spray, $13. The bamboo extension with globe valve seven feet long, $2 75. All excess in length over seven feet, twenty-five cents per foot. The concentrated lye, of the American Lye Company, in one pound cans by the case of forty-eight pounds, $3 50 per case. English caustic soda in 600 pound drums, $33 to $35 per drum. The whale oil soap and sulphur mixture called the "Codlin Moth Wash," is manufactured in San Francisco, and the price can be ascertained by inquiring of Messrs. Allyne & White, 112 Front Street.

In conclusion, I will give the analysis made by Prof. Hilgard, of the State University, of a sample can of American Lye Company concentrated lye. The can sent I took from a lot I had been using, and is supposed to be a fair sample of the manufacture. The analysis is as follows:

Caustic potash	8.3
Caustic soda and some carbonate of soda	91.7
	100.0

With this I submit my report, expressing my firm conviction that ere long we shall be freed from the ravages of one of the most dreaded pests known to horticulturists.

APPENDIX TO DR. CHAPIN'S REPORT.

[The following is an Appendix to the report of Dr. Chapin on the Scale Insects, which was published in the Rural of Oct. 28, and Nov. 4, 1882.]

I take the opportunity to add in this Appendix several important matters which have been ascertained since the first printing of this report. In regard to the *Lecanium oleæ*, mentioned as so seriously infesting an orchard of deciduous fruit trees, I have just visited that orchard, and now cannot find even a specimen of the scale of the present season. The trees were all washed the past Winter with concentrated lye—one pound to one gallon of water—and with the result of completely destroying this scale. The strength of the lye, however, destroyed part of the fruit buds on the French prune trees, lessening the crop for this season, but that obtained being of the first quality. The *Aspidiotus perniciosus* has lately been found infesting the blackberry bushes, in company with the white scale, *Diaspis Rosæ*, which has long troubled the blackberry and raspberry. I have also just discovered its presence upon rose bushes, which it has killed, as it does everything it attacks. At the same place it was also found infesting the Japan quince, fruit and branch. Thus it is seen that our ornamental shrubs are almost all liable to its attacks.

The *Icerya* scale has within the past few months been spreading to localities which were last year free from its presence. One of the most serious matters concerning it has just come to my knowledge. The following communication from Mr. A. Kamp, sexton of Oak Hill Cemetery, was read at the last meeting (November tenth) of the San José Common Council:

> WHEREAS, A certain scale insect, known as the "cottony cushion scale" (*Dorthesia* or *Icerya purchasi*), having attacked certain trees and plants in Oak Hill Cemetery, and are threatening, with certainty, the destruction of every tree and plant therein; now, therefore, being in doubt as to my authority in entering the lot of any one and removing infected trees without their permission; and whereas, each deed bears upon its face a condition subjecting it to such rules and regulations as may be adopted from time to time by the Mayor and Common Council for the better government of said cemetery, I now, therefore, do petition and ask your honorable body to pass an ordinance authorizing the sexton, on the approval of the Cemetery Committee, to remove all infected trees in Oak Hill Cemetery.

To ascertain the condition of this beautiful city of the dead, I visited it, and by the kindness of Mr. Kamp, was shown the work which has been done by this pest. It is fast taking possession of almost every variety of ornamental tree and shrub there, as well as invading the domain of the floriculturist. The scale is so abundant in places that it covers almost entire many trees and bushes, and can be seen continuously dropping down to the ground, and the young and partially grown ones literally covering the fences like patches of red paint, and also lying upon the ground in masses of thousands upon thousands, so thick and so deep in places of several inches square that the ground cannot be seen. In a short walk around the cemetery Mr. Kamp collected for me to bring to the Fruit Growers' Convention the following infested specimens, all of which are in the exhibition hall for the inspection of horticulturists and the public. These comprise some deciduous fruit trees, many evergreen trees, shrubs and vines, flowers, etc. Pear trees, apple trees, the forest trees, the white oak, *Quercus alba*, and the California laurel; the English laurel, *Laurus cerasus;* the beautiful shade trees, the black locust, and the cork elm; the different varieties of acaciæ; magnolia, grandiflora, dwarf flowering almond, wild greasewood, bridal wreath, rose bushes of various kinds (though it is here to be noted that the Banksia rose, which was among the infested varieties was not at all troubled), the dwarf box, pittisporum, tobria, English ivy, clematis, verbena, veronica, variegated sage, and strawberry plants. Also, specimens of the oleander, which were completely covered with the black scale, *Lecanium oleæ*. Many more varieties might have been secured, but these will indicate that almost everything is subject to the attack of the *Icerya*. There is, however, one of our most beautiful trees that is free from all scale pests, viz.: the pepper tree. The danger of visitors to our cemetery carrying away this scale to their homes is of the gravest character.

DAMAGE FROM COAL OIL.

The application of coal oil shows such peculiar results upon trees that the danger attending its use is daily becoming more and more apparent. I have just visited an orchard belonging to Mr. P., who, in the latter part of December, 1881, washed one hundred and sixty Newtown Pippin apple trees, ten years old, with the coal oil branded "tree wash." These trees were not harmed, although the scale was killed. On the same day the pippins were finished, he washed thirty-four White Winter Pearmain trees, standing beside the others, from the same barrel and in precisely the same manner; the same person also doing the work. The result was, that all the pearmain trees were killed. On an adjoining place men were washing with the same "tree wash" at that time. In this case many pippin trees were badly injured and some killed, while the pearmains were not apparently harmed. Here were shown exactly opposite results on adjoining properties. With these uncertainties attending the application of a particular agent, it is best to abandon it altogether.

DISINFECTING PEACH ROOTS.

With the use of lye there is not such danger existing. I have been many times asked the question, "Can concentrated lye be used on the roots of trees without injury?" I think this can now be safely answered with regard to peach roots, at least, and anything on that stock. In February, 1882, Mr. H. C. Morrell, of Wright's, Santa Cruz Mountains, purchased two hundred and thirteen Solway peach trees from a lot brought from the East. They being poor trees, he feared some disease attended them, and he decided to wash them entire. Before planting he dipped the trees entire, root and top, in concentrated lye, one pound to one gallon water. He tells me, on November 9, that the trees have all lived, except two, which perished from other causes. The trees are healthy, and have made the same growth that his other trees have done. At my request he will dig up one of those trees and bring it to the Convention for the inspection of the members.

An excellent method of dissolving concentrated lye in cold water is by placing the finely broken up lye in a wire basket, and suspending it in cold water near the surface. The lye will readily dissolve, and, by its greater specific gravity, saturate the bottom first, gradually reaching the top. In this way 300 pounds may be dissolved in 100 gallons of cold water in from twelve to fifteen hours. The great object here gained is the saving of fuel and labor.

Further inquiries relating to caustic soda have enabled me to state that it will be used to a considerable extent this coming Winter. It can be supplied in drums of 600 pounds, Runcorn Alkali Company brand, for four cents per pound. Caustic potash can be obtained in like drums of 300 pounds for six and one half cents per pound. The analysis showing the relative quantities of each of these articles in concentrated lye enables orchardists to mix to suit themselves. At the cost of each given alone, 90 per cent of soda and 10 per cent of potash would give, at the strength of one pound to one gallon water, four and one half cents per pound or gallon. Probably no effectual wash could be made any cheaper than this. To save weighing or measuring, the lyeometer, or lye tester, is used. This may be purchased for seventy-five cents. By dissolving one pound of the lye in one gallon of water the degree marked on the lyeometer will show the density of the fluid, and in future preparations it may be made to suit. An illustration of relative strengths and combinations of these salts is shown in the exhibition hall. The degrees shown by the lyeometer are as follows, each in the strength one pound to one gallon water:

	Settled.	Agitated.
1. Concentrated lye, American Lye Company	13°	16°
2. Caustic soda	15°	16°
3. Caustic potash	11°	12°
4. Caustic soda, 90 per cent	22½°	26°
5. Caustic potash, 10 per cent	22½°	26°
6. Pure water	0	

It is very important that a proper selection of caustic soda be made, as many cheap brands do not possess caustic properties, but are worthless salts with acids. The brand of A. G. Kurtz is good, and can be furnished for four and one quarter cents per pound. A more costly article, and the purest, being also of greater strength, is that made by Greenbanks. This is the best, and costs six cents per pound. I apprehend that the main difficulty with the cheap brands of concentrated lye is that they are made of worthless soda. We should be careful in our efforts always to secure a valuable article if we would succeed.

LATER NOTES ON THE WOOLLY APHIS.

The year has given some valuable hints in regard to this pest. Some experimenters report failure in the use of alkaline applications about the roots of infested trees. In one case it is said that the aphides were found crawling up through a mixture of lime and ashes. On the other hand, from several parts of the State statements come in that lime has destroyed the pest. In one case, at least, quicklime was applied close to the tree, and upon the roots, without injury to the tree. A basin should be dug about the tree, a liberal supply of lime thrown in, and covered over with earth. If there are no facilities for irrigation, it is important that the application should be made in the Autumn, or early Winter, to insure a thorough soaking of the infested roots by the alkaline solution.

There is also an accumulation of evidence to the effect that gas lime may be used with safety, in moderate quantities, on well drained soils. Professor Husmann used gas lime in the Simonton Vineyard, at the rate of one gallon on a surface eight feet square. It was intended as a partial insecticide against the phylloxera, as a manure, and to improve the tilth or mechanical condition of the soil. Professor Husmann reports a great increase in the vigor of the vines and in their crop of grapes.

At the Rancho Chico gas lime was also used about apple trees. In all experiments due care should be had that the water containing the soluble parts of the gas lime may not stand long upon the roots of the tree or vine. Great service may be done to the public by those who will experiment carefully and report results to the Horticultural Commissioners, using lime, ashes, gas lime, niter, tobacco, carbon bisulphide, etc.

C. H. DWINELLE.

REPORT OF A. S. WHITE

COMMISSIONER FOR THE LOS ANGELES DISTRICT.

RIVERSIDE, September 25, 1882.

C. H. Dwinelle, Esq.:

DEAR SIR: Your postal at hand. Mr. Cooke has so recently visited every portion of this district that he is much better qualified to give the information that you desire than I am. Of this, however, you can rest assured, that everything is progressing as favorably as we can expect The trees in most of the infested districts are being rapidly cleaned, and nursery stock is not being shipped into districts not infested. I think public opinion has been educated up to the proper standard, and will sustain any just laws for the protection of our horticultural interests. The entire Press is with us. Am sorry I cannot attend at this meeting, but find it impossible to do so.

Yours truly,
ALBERT S. WHITE.

THE "SMUT" FUNGUS.

[Fumago salicina.]

Compiled by E. J. Wickson, Horticultural Commissioner for the State at Large.

The prevalence of the Black Deposit on orange, lemon, olive, walnut, and other trees, in this State, makes timely a brief statement concerning the fungus which causes it, and the conditions under which it appears. Fortunately, the fungus has been carefully studied from California specimens, by Professor W. G. Farlow, of the Bussey Institution of Harvard University, who is one of the leading mycologists of the United States. His writings are published in the Bulletin of the Bussey Institution for 1876 (Part V), but are not available for California readers; hence this attempt at a compilation therefrom, which shall contribute to a popular understanding of the subject. I shall also introduce a few observations concerning the occurrence of the fungus, from other sources.

After a thorough study, Prof. Farlow determined that the fungus sent him from this State is identical with that which has been known in Europe since 1829, and which, occurring in different forms, had been given different names. These forms were, however, found to be various stages of growth of the same fungus, which is now known as *Fumago salicina*. It is reported as occurring in Europe on willows, oaks, birches, hawthorn, quince, and pear trees, and on oranges. In California it was first recorded as affecting the olive, and here also it may be seen on almond, walnut, California laurel, and other trees. Its presence on the orange and lemon trees in this State is, however, most obtrusive, because it gives the dense foliage of these trees a most sorry appearance, and because it covers the fruit, making it exceedingly ill-looking, and reduces its market value considerably. Retailers of these fruits resort to brushing, washing, and other means to remove the black coating, and growers in "smutty" localities are sometimes forced to cleanse the fruit to make it marketable.

The fungus, *Fumago salicina*, does not enter into the substance of the leaf or young bark upon which it grows. For this reason it does not destroy the vegetation upon which it is parasitic, and it is therefore unlike the "rust" on grain or the mildew on the rose or the grapevine, which do penetrate and destroy the tissues of the plant upon which they grow. Scraping or brushing the "smut" from the leaves or fruit of infested trees show the surface of the leaf or the skin of the fruit uninjured. Thus the smut may exist without destroying the vitality of the tree, although it is quite sure that such a close covering as sometimes occurs must, to a greater or less extent, interfere with the functions of the leaves, and thus reduce the vigor of the tree.

When it is seen that the fungus does not draw its nourishment directly from the tree, it becomes an interesting matter to discover its means of livelihood. On this point, Professor Farlow says:

> The disease, although first attracting the eye by the presence of a black fungus, is not caused by it, but rather by the attack of some insect, which itself deposits some gummy substance on the leaves and bark, or so wounds the tree as to cause a sticky exudation, on which the fungus especially thrives; * * * and in seeking a remedy, we are to look further back than the fungus itself--to the insect, or whatever it may be, which has made the luxuriant growth of the fungus possible.

With these remarks, Professor Farlow commends the subject to the entomologists.

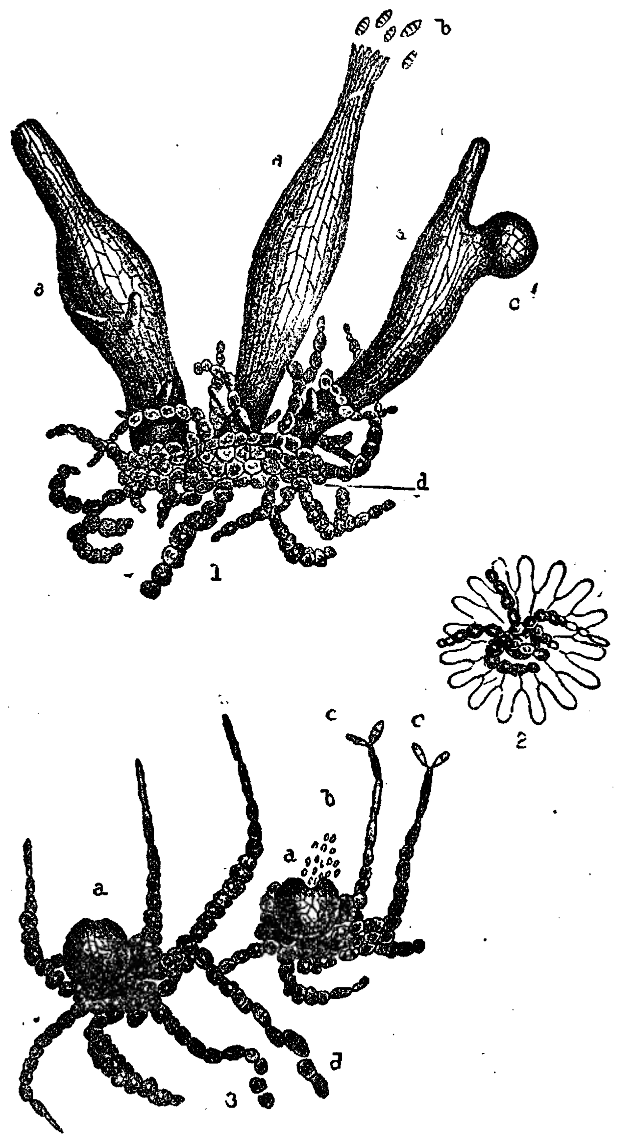
The recommendation was accepted by Professor J. Henry Comstock, and the subject was made a study by him while in California in 1880. In his address before the California State Horticultural Society, September 24, 1880, he said:

> My own observations confirm the conclusions of Professor Farlow. In fact, before I read his paper, I had learned to consider the presence of fungus on the leaves as a sure indication of the presence of scale insects. And as I had never been able to find the fungus organically connected with the plants, but simply growing over the surface of them near the coccids, and easily removed by rubbing, I supposed that it grew upon the honeydew which the insects excreted, and which so frequently attracts the visits of the ants. Professor Farlow suggests, as a means of destroying the fungus, the use of alkaline soaps as strong as the trees will bear. If our conclusions respecting the fungus be true, this remedy will be found a very effectual one, for it will destroy the scale insects, which render its presence possible.

It may be remarked farther, that experience during the last two years has proved, on a large scale, the truth of this observation, for the free use of whale oil soap and of concentrated lye, which has been made in the southern counties, has not only cleaned the trees of the scale insects, but has changed them from their vile smutted condition to the handsome green of clean foliage. The use of the same agents to kill the scales adhering to the fruit before marketing, as ordered by the quarantine rules of the Chief Executive Horticultural Officer, has also removed the smut from the fruit and greatly increased its market value. In this connection it may also be remarked that the freedom from smut which is enjoyed in certain regions back from the coast, may be attributable to the freedom of the trees from scale insects, rather than to some climatic condition unfavorable to the growth of the fungus. At any rate, it is thoroughly demonstrated that means which have been found effectual in destroying scale insects cause the smut also to disappear. I shall attempt now to present the facts ascertained by Professor Farlow concerning the growth of this fungus. In order that the subject may be more intelligible, I introduce a copy of Professor Farlow's engraving, for which I am indebted to the publishers of the Pacific Rural Press. Professor Farlow says, speaking of specimens of smut he obtained from olive leaves:

> The black substance, when seen with a magnifying power of four hundred diameters, is found to be composed of the stellate hairs of the olive, over which grows the fungus, to the dark color of whose mycelium the spots owe their color. The mycelium is very variable in appearance. As a rule it is composed of moniliform hyphæ, whose cells are .006 mm. by .008 mm., and in some places almost spherical.

These bodies called hyphæ are seen at Fig. 1*d*, where they grow so closely as to form a sort of membrane, which extends parallel to the surface of the leaf and forms the chief part of the black substance which may be scraped or washed from the leaves. Besides these multitudinous oval or spherical bodies seen with the microscope, there are larger forms, as shown in Fig. 1 at *a a a*. They are termed



stylospores. They are flask-shaped bodies, extending above the mass of the mycelium by which they are surrounded. They may be easily seen with a good magnifying glass, as the black projecting necks are tolerably conspicuous. They vary much in shape, and have forks, branches, and swellings, as shown in the engraving, Fig. 1 *c*, and from them are liberated spores, as shown at Fig. 1 *b*. Other forms of the fungus are shown in Fig. 3; *a a*, are bodies termed picnidia, which are quite numerous. They consist of a membraneous sac, of a black color, which contain the small bodies, which are represented as being discharged at *a*. Still another form of the fungus is shown in Fig. 3 *d d*. These are one form of bodies, called conidia. The ordinary cells of the mycelium divide by cross partition into two parts, which do not grow to the same shape as the mother cell, but remain two by two, as shown in the figure, the hyphæ becoming zigzag, and finally they fall off and germinate. Another form is shown at Fig. 3 *c c*, where the hyphæ, rising at right angles to the plane of the mycelium, grow more and more attenuated and branch at the tip. The terminal cells divide in two, fall from their attachment and germinate.

Fig. 2 shows the manner in which the fungus entwines itself around the stellate hairs which grow upon the surface of the olive leaves. Prof. Farlow says:

> A microscopic examination shows why the deposit is more easily removed from the orange than the olive leaves. The smooth surface of the former gives no permanent attachment to the fungus, which, as we heretofore said, does not penetrate into the interior of the cells of the mother plant, while on the other hand, the hyphæ wind themselves tightly around the stalks of the stellate hairs of the olive, from which they cannot be removed. If the fungus should attack both oranges and olives, it is very evident why the latter would suffer much more than the former.

Prof. Farlow suggests that this fungus needs more study. There are other forms than those described which may exist. Especially is it to be desired that careful notes of the extent and manner of appearance of the disease, and the climate and hygrometric conditions attending it, should be carefully recorded.

SEVENTH REPORT

OF THE

STATE BOARD OF HEALTH

OF

CALIFORNIA,

From July 1, 1880, to December 1, 1881.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

MEMBERS OF THE STATE BOARD OF HEALTH.

HENRY GIBBONS, Sr., M. D., President	San Francisco.
J. P. WIDNEY, M. D.	Los Angeles.
W. R. CLUNESS, M. D.	Sacramento.
CHESTER ROWELL, M. D.	Fresno.
C. C. MASON, M. D.	Chico.
C. W. BREYFOGLE, M. D.	San José.
F. W. HATCH, Sr., M. D., Permanent Secretary	Sacramento.

COMMITTEES OF THE STATE BOARD OF HEALTH.

1. Committee on the Salubrity of Public Institutions, Schools, Hospitals, Prisons, Factories, etc.:

Drs. Cluness, Widney, and Breyfogle.

2. On Statistics relating to Life and Health, Modes of Employment and of Living and the Comparative Healthiness of Different Localities:

Drs. Cluness, Widney, and Rowell.

3. On Intoxicating Liquors, Inebriate Asylums, Pathological Influence of Alcohol, etc.:

Drs. Gibbons, Mason, and Breyfogle.

4. Influence of Irrigation, Tree Planting, etc.:

Drs. Rowell, Widney, and Mason.

Of these Committees the Secretary of the Board is *ex officio* a member.

REPORT

OF THE

STATE BOARD OF HEALTH.

REPORT OF THE STATE BOARD OF HEALTH.

To his Excellency George C. Perkins, *Governor of California:*

The State Board of Heath have the honor of herewith presenting their Sixth Report.

It is a proper subject for congratulation, that the epidemic of smallpox, which prevailed more or less during the past two years in the metropolis, and for a certain time in a few other localities of the State, may be said to have expended its force, and to have almost, if not quite, disappeared from our midst.

When we consider the virulence of the variolous contagious principle, and the facilities afforded through constant intercourse with the chief center of its prevalence in this State along the various lines of travel, it has seemed somewhat surprising that it should not have been more generally disseminated; and this exemption is all the more noticeable in view of the additional, and even greater, danger of the widespread diffusion of the disease by means of the immigration flowing in upon us through the seaport cities of the Atlantic border, and from infected localities in States east of the Rocky Mountains. There can scarcely be a doubt that the measure of exemption realized has been mainly due to the general adoption of vaccination in all our cities, and in many of the country towns. At no period in the history of the State has this measure been so generally practiced. There seems to have been an almost universal recognition of its protective influence. That the energy with which it was prosecuted by the health authorities of the City of San Francisco, was the means of saving that city from a general and devastating epidemic there can be but little doubt; and it is not too much to say, that San Francisco is, at the present time, one of the best vaccinated cities in the United States.

Some interesting questions have arisen out of the presence of smallpox in the State, and the method of its introduction to localities in the interior. We have been brought face to face with several serious defects in our sanitary laws. They have been referred to at some length in the accompanying Report of the Secretary of the State Board of Health. One of these defects was seriously felt during the past Winter, when, for the protection of the State from the introduction of smallpox from eastern States, it was deemed prudent to institute a system of *inspection*, and, possibly, *quarantine*, of immigrant passengers near the State boundary. The absence of any law for such a procedure at once presented a serious difficulty, which was surmounted only by the prompt and liberal action of your Excellency in assuming an authority not written in the statutes, but dictated and warranted by the common law of self-protection. Fortunately, no serious obstacle was interposed by the railroad authorities; due, perhaps, to the very limited interruption of travel which became necessary. Should, however, circumstances have occurred requiring the frequent and more prolonged exercise of quarantine measures, it is not difficult to understand that a conflict might easily have arisen.

Such a contingency ought never to be possible. It is unsafe to trust, for the successful execution of sanitary measures, to the consent of individuals or corporations with whose special interests they may for a time seem to come into collision. Sanitary laws are intended to promote the greatest of all interests—the public health; and, while they should be so guarded as to protect all citizens and business interests from unnecessary or arbitrary interference, and to impose hardship and loss upon no person or corporation, they should be so clear and imperative in their action that their enforcement may not be endangered by opposition or caprice.

We respectfully refer you to the report of the Secretary for further remarks upon this important subject.

Your attention is respectfully called to the required amendments to the law concerning the registration of deaths, births and marriages, and to that establishing local Boards of Health. These laws are, at present, inefficient. Their importance justifies the careful consideration of the Legislature.

Again: There should be, as suggested in the report, an amendment to the School Law, requiring the vaccination of all children entering the public schools, not only of the cities but of all country districts, unless previously protected. By the strict enforcement of such a law, we might confidently look forward to a period by no means remote when there would exist in California a race of men in the presence of whom the contagion of variola would be bereft of its terrors, living witnesses of the efficacy of that simple discovery which gave immortality to the name of Jenner.

Among the various objects which invite the attention of the Government, none are more important, none calculated to be productive of greater general good, than those which relate to its sanitary interests. A step in the right direction was made when a State Board of Health was established. The organic Act creating this Board embraces the more important objects of sanitary investigation; it prescribes duties which, if faithfully performed, must give results highly conducive to the welfare of the State. Yet, while prescribing its duties, while pointing out the general direction and scope of its work, it has left it powerless to enforce its decrees. Its power is simply advisory—sufficient for all ordinary purposes in times of health, but signally inoperative and inefficient when danger threatens. Let it be supplemented by Acts embracing the general objects of sanitary legislation, conferring power when necessity demands its exercise. Thus only can its vitality be sustained, and the full purposes of its organization accomplished.

Presented for the State Board of Health.

F. W. HATCH, M. D.,
Permanent Secretary.

Sacramento, California, October 1, 1882.

FINANCIAL STATEMENT OF THE STATE BOARD OF HEALTH.

The following financial statement is respectfully presented:

APPROPRIATION AND EXPENDITURES

For "Mileage and Expenses of State Board of Health," for the thirty-second and thirty-third fiscal years, ending June 30, 1881 *and* 1882, *respectively.*

	THIRTY-SECOND FISCAL YEAR.		
April 16, 1880	Appropriation	$1,000 00	
July 1, 1880, to June 30, 1881	Amounts paid members of the Board (Controller's warrants)		$938 14
June 30, 1881	Balance of appropriation unexpended		61 86
		$1,000 00	$1,000 00
	THIRTY-THIRD FISCAL YEAR.		
May 12, 1881	Appropriation	$1,250 00	
April 15, 1882	Proceeds from sale of stove (paid in by Dr. Hatch)	20 00	
July 1, 1881, to June 30, 1882	Amount paid members of the Board on Controller's warrants		$702 78
June 30, 1882	Amount paid Dr. Rhodes, Quarantine Officer		280 00
	Other expense attached to quarantine service, viz:		
	Purchase of stove and trimmings $51 50		
	Bedding and clothing 8 50		
	Drugs, vaccine matter, etc. 34 80		
	Supplies to quarantined passengers 125 50		
			220 30
April 15, 1882	Proceeds from sale of stove		20 00
June 30, 1882	Balance unexpended		46 92
		$1,270 00	$1,270 00

REPORT OF THE PERMANENT SECRETARY

OF THE

STATE BOARD OF HEALTH.

2ⁿ

REPORT OF THE PERMANENT SECRETARY.

To the State Board of Health:

The last report which I had the honor to present brought up the statistics of mortality to July, 1880, it being in the nature of a special report, made necessary by the changes in the time of holding the Legislative sessions, brought about by the adoption of the new Constitution. The statistical portion of the present report will be made to conform to the plan previously adopted, and will include the full year ending December 31, 1881.

For the purpose, however, of filling the gap from July 1 to December 31, 1880, I have prepared an abstract of the deaths and their causes, in the several cities and towns, reporting to the State Board of Health, including the six months ending with that date. It is presented below in the form of a summary of the circulars issued about the tenth of each month. In it are shown the total mortality, and that by the principal diseases, for the period it embraces. These diseases belong principally to the zymotic class—that class over which climate and local conditions are thought to exert a more or less positive influence.

Twenty-two localities are reported in the following table, including the principal cities and towns, and a total population of 368,164, as per the census of 1880. The total mortality is given at 3,150, showing a death-rate per 1,000 per annum of about 13.36.

Of the different diseases recorded, consumption stands at the head, the deaths having been 511, and the death-rate 2.77. The acute diseases of the respiratory organs stand next, including pneumonia and bronchitis, the mortality being 248, and the death-rate per 1,000 per annum, 1.34. Diarrheal diseases show a mortality of 169, of which 108 are set down to cholera infantum. The death-rate of this class is 0.70.

By the contagious diseases, including diphtheria, we have 149 deaths, of which the latter is responsible for 30, and smallpox 51. The annual ratio of deaths per 1,000 is 0.60, while by diptheria alone it is 0.16, and by smallpox, 0.26.

The deaths by typhoid fever are 92, and by malarial fevers (typho-malarial and intermittent and remittent), 53. By the former the annual death-rate is 0.48, and by the latter, 0.28.

CIRCULAR OF THE STATE BOARD OF HEALTH.

Abstract of the Reports of Deaths and their causes in the following Cities and Towns of California during the six months ending December 31, 1880.

CITIES AND TOWNS.	PREVALENT DISEASES.																					AUTHORITIES.
	Total Deaths	Consumption	Pneumonia	Bronchitis	Other Diseases of Lungs	Diarrhea and Dysentery	Cholera Morbus and Cholera Infantum	Other Diseases of Stomach and Bowels	Diptheria	Croup	Scarlatina	Measles	Smallpox	Whooping-Cough	Typho-Malarial Fevers	Typhoid Fever	Remittent and Intermittent Fevers	Cerebro-Spinal Fever	Alcholism	Erysipelas	Months Reported	Death Rate per 1,000 per annum	
San Francisco	2,202	386	147	19	20	33	69	49	23	11	6	13	43	25	6	56	18	12	27	5	6	18 82	Board of Health.
Sacramento	193	13	13	1	2	2	7	3	7	1	3			3	1	12	3	3	1	1	6	18 02	Board of Health.
Stockton	42	6		1		2		3					4								4	12.24	Dr. A. T. Hudson
Marysville	64	11	13	2		1		2								2	8		1	1	6	21.73	Dr. A. B. Caldwell.
Placerville	16	1	1					4								2	1				5	19 68	Dr. E. A. Kunkler.
Santa Barbara	38	7	1			2		1								4					6	21.96	Dr. C. B. Bates.
Los Angeles	126	23	5	2	3	7	3	5	1			3				3	2	2			6	22.27	Board of Health.
St. Helena and vicinity	20	4					1	1				1									6	12.56	Dr. W. J. G. Dawson.
Folsom	7		4																		5	11.19	Dr. F. C. Durant.
Merced	14	3	2		1		2	2								1					5	11 18	Dr. H. N. Rucker.
Williams	4						1		1												3	6.40	Dr. H. C. Crowder.
Downieville and vicinity	5		1				1												1		6	7.14	Dr. Alemby Jump.
Antioch	5	1				1										1	1				6	4.00	Dr. M. C. Parkison.
Sonoma and vicinity	6	1																			6	8 00	Dr. G. M. Wells.
Santa Rosa	37	3	2				5	3						1					2	1	6	12.84	Dr. W. Winlaw.
Vallejo	31	7	7		3	3	1	2				1		1			1	1			6	9.56	Dr. James Frost.
Shasta	6		1					1												1	4	8.00	Dr. J M. Briceland.
San Bernardino and vicinity	18	4				3										1	3				5	10.63	Dr. W. R. Fox.
Ventura County	20	5						3			1					1	1	1			6	7.14	Dr F. Delmont.
Chico	47	2	7	1			9	2							1	1	1	3			6	18.80	Dr. C. C. Mason.
San Mateo County	37	13	2		1		2										1	1	4	1	6	29.60	Dr. C. A. Kirkpatrick.
Oakland	212	21	10	6	1	7	7	7	3	1	1	1	4	6	3	8	2		1	1	6	12.27	Board of Health.
Totals	3,150	511	216	32	31	61	108	88	30	13	11	19	51	36	11	92	42	23	37	11			

EPIDEMICS.

Previous to October, 1880, no disease prevailed to a sufficient extent to entitle it to be called an epidemic. A few cases of scarlatina had occurred in Sacramento, Ventura County, and Vallejo, but they were isolated in character. The disease appeared for the first time in the mortality table, in August, with one death—Sacramento; again in October with three deaths—one in Sacramento, one in San Francisco, and one in. Ventura County. The mortality bulletin issued October tenth, contained also the following:

> Smallpox, which made its appearance in San Francisco, Oakland, and Stockton some months ago, but limited to isolated cases, or to special localities, seems to have received a new impulse, and to have become at least feebly epidemic in the former of these cities. Cases have also been recently reported by the press in Oakland, and one in San Jose; one death occurred during the present month, November, at the pest-house near Sacramento, the patient having been brought here from the mountains. While there is no present need of very great alarm, the lessons of the past teach us the importance of being prepared for its approach and of meeting it by the only effectual prophylactic known to medical science.

In the following month (November) the only death by scarlatina was reported from San Francisco, though the "reports of sickness" mentioned it as lingering mildly in Sacramento. By these reports diphtheria, though presenting a mortality of only 2, was ascertained to prevail to some extent in nearly all localities from which such reports were received. It was said in the bulletin for that month to be more or less prevalent in Colusa County, in Ventura County, in San Bernardino, in Redwood City, in Downieville, in Sacramento. City, and Folsom. Five cases, with 2 deaths, have been reported by Doctors Rickey and Crowder, in Indian Valley, and it is said to have assumed a severe form in other parts of Colusa County, from which no regular reports are received. Smallpox, the same bulletin referred to as follows:

> Smallpox, mentioned in the last circular as having appeared in San Francisco and some other towns, continues to prevail. Notice has been received of it from Stockton, the vicinity of St. Helena (a single case of varioloid), Jackson, Amador County, and at Willows, in Colusa County. One case is also reported in Sacramento County. There seems to be an evident disposition for the disease to extend to the interior of the State, and the communication with San Francisco constantly going on from almost all parts of the State, certainly affords ground for apprehension. The importance of vaccination, the only protection known to medical science, cannot be too often or too strongly urged.

The deaths by this disease were 9: 8 in San Francisco (to the 26th), and 1 in Willows. Three deaths had previously been reported in Oakland, and 4 in Stockton.

Measles was for the first time (November) reported in the mortality table with five deaths, while its prevalence was known at Sacramento and Vallejo. Later on, in the following year, it will be shown to have become widely prevalent in many sections of the State.

Smallpox was represented by 12 deaths, of which 10 occurred in San Francisco during the four weeks ending December 24th, 1 in Oakland, and 1 in or near St. Helena. In the same month there were 5 deaths by measles, 3 being in Sacramento, and 2 by scarlatina. It was also reported prevalent at Vallejo.

Up to the close of the year the number of deaths by smallpox known to have occurred, though they are not all reported in the bulletin, was 53—of which 43 were confined to the metropolis.

A more extended notice of this disease, as it occurred in California, will be given in another part of this report.

REVIEW OF 1881.

The year 1881, while presenting only a small mortality, possesses a somewhat interesting history. During the year smallpox, to which reference was made in the comments on the mortality table for 1880, continued to prevail more or less in the metropolis, from time to time appearing in localities in the interior of the State, rendering the adoption of unusual precautions necessary. Then, again, measles, which was shown to have occasioned five deaths at the close of the last year, ultimately spread over a very large portion of the State.

The total mortality for the year, in the thirty-one localities reporting, including the principal cities of the State, is shown to have been 6,226; the rate per 1,000 of population being 13.65. The enumeration of population is based, where practicable, upon the United States census of 1880. In other cases the most reliable estimate obtainable has been adopted. It is believed to fall rather below than above the true condition, a number of the localities having considerably increased in population from the middle of 1880 to that of 1881. The total population represented is 404,464. Of the deaths, 899 belong to the zymotic class, 1,474 to that of constitutional diseases, 2,321 to local diseases, 206 to the developmental class, and 1,326 to external causes, including causes unclassified.

Of the deaths classified as zymotic, 190 belong to the miasmatic division or order, 23 to the enthetic order, and 86 to the dietic order. To the last order properly belong a considerable number of the cases given under the title of marasmus, in the next class, as they include deaths by inanition or innutrition; they could not, however, be separately classified in this report.

Under the first order, we find typhoid fever to have occasioned 179 deaths—more than any other single cause. Cholera infantum ranks next, with 121 deaths. Diphtheria next, with 87 deaths. Including the latter with the three principal contagious fevers, we have a total of 206, or 87 by diphtheria, 75 by smallpox, 26 by scarlatina, and 18 by measles—nearly 23 per cent. of the total by the zymotic class.

Diarrheal diseases claimed 21.58 per cent.; the fevers, 32.7 per cent.; whooping cough, 3.7 per cent.; and croup, 4.56 per cent. There is doubtless an uncertainty as to the real distinction between the cases designated as croup and those set down as diphtheria. Diphtheria affecting the larynx and trachea, without much involvment of the fauces, is not readily distinguished from true croup. The prominent symptoms and the fatality are the same. There is, in fact, strong reason to believe that the two diseases are identical.

The causation of diphtheria is often obscure. The following history of cases occurring in Grass Valley, a mountain town, will not be without interest in this connection, as indicating the probable relationship of the disease with impure and sewage-contaminated water. One of the cases referred to was seen by the writer with Dr. W. C. Jones, in March, 1881—a little girl about fourteen years of age—proving rapidly fatal, making five cases to that date. In this family, four cases had previously occurred within a period of eight or ten years; and, one week after her death, a brother, aged six years, was attacked, and died in about two weeks. This was the sixth case. It is a significant fact, pointing to the existence of a local cause, that at no time when diphtheria occurred in this family did it prevail in other portions of the town.

The house is isolated. Just outside the rear door is the well, open at the top, and bricked up from the bottom with loose bricks. It is built upon a hillside, the soil being red and gravelly, covering, about a foot below, a sandstone bedrock. Sixty or eighty feet above the well is the privy, a shallow vault excavated to the depth of the bedrock, its direction from the well being precisely that of the "dip" or trend of the bedrock. Between the privy and well is the woodhouse, used also as a receptacle for refuse of different kinds; and around this is a shallow ditch to catch the surface water as it runs down the hill during the rainy season, this ditch or trough being about three feet from the well, permitting the easy percolation of its retained water into the well, as also that which overflows the trough during the heavy rains.

The relative positions of the well and privy, the shallowness of the latter, the depth and character of the soil resting upon a rocky foundation, the inclination of the latter being towards the well, and the occurrence of diphtheria in this isolated house, at a time when none prevailed elsewhere in the town, seems to render the inference of well-water contamination, and its agency in the causation of the disease, very probable. Such examples teach a lesson often repeated, but seldom heeded.

Of the 87 deaths reported as having been occasioned by diphtheria, four were under one year of age, and forty-eight from one to five years; total, under five years, 52.

The prevalence of measles during the year has been mentioned. It appeared in a number of localities, indicated rather in the "Reports of sickness" than in the mortality table. The number of deaths reported is eighteen, though it is possible that some of the deaths, attributed to pneumonia, were only such as were secondary to measles. The deaths, under 1 year of age, were 6; from 1 to 5, 8; total, under 5 years, 14. In some of the localities, from which this disease was reported, it was associated more or less with Rötheln or German measles, either antecedently, or at the same time. So prominently, indeed, was this relation of the two diseases observed, and so frequently one followed the other in the same individual, that it became a common observation among the citizens of Sacramento, for example, that their children had been subjected to two attacks of measles within a few weeks. The same thing was noticed among adults. It differed from measles in the earlier appearance of the symptoms, the more round or oval form of the latter, and its shorter duration, generally in the milder character of the catarrhal symptoms, though in some cases, bronchitis was a prominent accompaniment. Desquamation was not noticed. Sore throat was common. The febrile symptoms varied in intensity and duration, usually milder and more transient than in measles; not infrequently the eruption was the first evidence of disease. It was contagious, one attack being protective against another, but not against measles. It was not confined to children, but attacked many adults, who, having had measles in youth, were surprised that they should again suffer with what they considered the same disease. I am not aware of any deaths occurring by it. The epidemic ran on during the early months of 1882, and was, indeed, more general then; as before stated, in some localities it was antecedent to measles, in others coincident with it.

Scarlatina appeared sporadically in a few localities, but nowhere as an epidemic during the year. The deaths were 26 in number, of which 12 were reported from San Francisco. Two deaths were recorded under 1 year of age, and 19 from 1 to 5 years; total under 5 years, 21.

Seventy-five deaths by smallpox were reported by correspondents to this office, and appear in the table. Deaths under 1 year of age, 8; from 1 to 5 years, 15; total under 5 years, 23. Other cases of this disease occurred, not regularly reported; they will receive attention further on.

Croup is assigned as the cause of 41 deaths, 21 being in San Francisco; under 1 year of age, 10; 1 to 5 years, 23; total under 5 years, 33. Seven cases were recorded as being between 5 and 10 years of age, and 1 between 20 to 30. The possibility of an error in diagnosis here has been noticed. This would appear especially so of the eight cases over five years of age. Croup is more particularly a disease of early childhood.

Whooping cough is made responsible for 34 deaths; under 1 year, 13; 1 to 5 years, 12; total under 5 years, 31.

Diarrheal diseases. The total mortality by these diseases, including cholera infantum, was 189. Cholera infantum alone occasioned 121 deaths. The deaths under 1 year were 121; from 1 to 5 years, 40; total under 5 years, 161. The "Sickness Reports" mentioned the considerable increase of these diseases in April. In Sacramento there was observed a strong tendency to gastric and enteric troubles. In June they were reported from almost all the localities from which "sickness" cards were received. The same was true of July, when there were recorded in the bulletin of the month 24 deaths by cholera infantum alone. In August they exhibited a decided decrease, but rose during September and October, to fall again during the last two months of the year.

Typhoid fever was the cause of 179 deaths; under 1 year, 2; 1 to 5 years, 14; total under 5 years, 16. Of the total mortality 90 occurred in San Francisco. The efficient Health Officer of San Francisco, Dr. Meares, has repeatedly called the attention of the city authorities to the insanitary conditions prevalent there. They consist mainly in defects of sewerage, which could be easily corrected, but which, neglected, must continue to be the predisposing, if not the exciting cause, of enteric fever. That officer speaks of them as "*continuous cesspools*, miscalled sewers, choked up, and in many instances filled with decaying animal and vegetable matters, distilling poisonous gases, which, through defective house drains, with no proper ventilation, sometimes without traps, and seldom with efficient ones, penetrate our houses, carrying with them disease and too often death." Yet the location of San Francisco is one in which it would seem that the engineer could most easily demonstrate his skill in the construction of an efficient and faultless sewerage system.

Outside of San Francisco 89 cases were reported; 12 in Sacramento, 14 in Oakland, 10 in San José, and 18 in Los Angeles. It is quite probable that a certain number of the deaths so classified belong rather to the typho-malarial fever. It is the general opinion among medical men, especially in the valley districts, that true enteric fever, having its characteristic lesion, is not common there. Its history, as met with, does not correspond as to causation or progress with the more specific disease. Throughout the greater part of California, particularly in the valley portions (Sonoma valley excepted) and in the foothills of the Sierra Nevada, the malarial influence modifies almost all of the febrile diseases met with. Other exceptions are noted in some of the coast cities—as at San Diego, Santa Cruz, Monterey and Santa Barbara. A general recognition of this fact and of the distinctiveness of the two forms of fever would simplify the classification, and give greater accuracy to the records. It would also serve, by placing each case in its proper nosological position, to solve the doubt, entertained by many, as to the necessary origin of true typhoid fever from its specific germ. The malarial forms, including typho-malarial and remittent and intermittent fevers, occasioned 66 deaths, of which 28 belong under the head of typho-malarial. This latter caused three deaths between 1 and 5 years of age; by remittent and intermittent form there were 3 under 1 year, and 7 from 1 to 5 years; total under 5 years, 10. Seventeen of the former were in localities outside of San Francisco, and 30 of the latter.

In the second order of zymotic diseases—the enthetic—we find syphilis, with 23 deaths; under 1 year, 7; 1 to 5 years, 3; total under 5 years, 10. These ten cases were doubtless hereditary or congenital, in which the sins of the fathers were visited upon the children.

The third order of the second class includes alcoholism alone, although, as previously remarked, some of the cases recorded under marasmus properly belong here.

Eighty-six deaths are reported by alcoholism, including delirium tremens and intemperance, fifty-six being of foreign birth. Fifty-one were reported from San Francisco. Forty-three were between 30 and 50 years of age—in the prime of life. Two are reported as being under one year of age; but of these no history is given.

CONSTITUTIONAL DISEASES.

The total recorded mortality by this class is 1,474; and under 1 year of age, 275; 1 to 5 years, 52; total under 5 years, 327.

Under the first order of this class—the diathetic diseases—we find only cancer, of which 175 deaths were reported, 84 being males, 89 females, and two unascertained (not given). The number of foreign birth is large—134, or more than 76 per cent. of the total. Only nine were born on the Pacific Coast. The aggregate of deaths is large, being nearly 29 per 1,000 of the mortality by all causes. In England, in 1876, the rate was 23 in every 1,000 deaths.

The second, or tubercular, order is of especial interest, not only on account of the diseases it includes, but also the number of deaths. In it we find 1,012 deaths, exclusive of marasmus, which is an uncertain term, and under which, as previously remarked, a very considerable number of the deaths must have been so recorded as the result of a faulty diagnosis. Probably many of them belong to the fourth order of the fourth class—diseases of nutrition. Adding these, however, as belonging to the nosological title of tabes mesenterica, 259 in number, we have a total of 1,371; 220 per 1,000 of the total deaths by all causes.

Of this large mortality, hydrocephalus gives 36; tubercular meningitis, 38. Of the former 15 died under 1 year of age; 19 between 1 and 5 years; total under 5 years, 34. Of the latter, 12 were under 1 year; 16 between 1 and 5 years; total under 5 years, 28.

Phthisis claims attention with 931 deaths; under 1 year, 14; 1 to 5 years, 9; total under 5 years, 23. The largest mortality was between the ages of 20 and 30—265; the next, 20 to 30—247. Of the nativities 156 were natives of the Pacific Coast, 286 of the Atlantic States, and 484 of foreign countries, with 5 unascertained. The record as it appears, without explanation, does injustice to some of the localities reporting. Such are the different health resorts of the State, places considered to be favored by climatic advantages, which for this reason become the refuge of the sick. Such, in truth, is the history of all sanitaria open to the public. Excluding San Francisco, which returned 596 deaths by phthisis, we have 335 due to interior towns and districts. Of these Los Angeles, Santa Barbara, St. Helena, San Bernardino, Ventura County, Lakeport, and Colfax, are responsible for 99. Los Angeles alone reports 55 deaths, or over 21 per cent. of its total mortality which without this explanation, might reflect injuriously upon the adaptability of its climate to chronic pulmonary complaints. Such a death-rate by consumption by no means belongs to the legitimate population of the town.

Some explanation is due, besides, to San Francisco, with its 596 deaths by this one cause. Though the climate of the place is not to be recommended for consumptives, it is naturally the rallying point for the very large number of invalids who reach California at too late a period of disease to be benefited by climatic influences, and who are compelled to struggle not only against disease, but against poverty and want. For such, the well provided hospitals of that city become a most acceptable refuge.

Of the deaths by phthisis among the natives of the Pacific Coast are to be included those dying under five years of age, probably as the result of direct hereditary taint. A considerable number, too, were among the native Mexican or half-breed population of the southern counties. It would be interesting to know precisely how many belonged to this class. The reports received do not reveal this in a manner available for statistical analysis. Again, it would be desirable to know how many of those born on the Pacific Coast, and who died of consumption, were the offspring of those who had come here for the benefit of their health, or who had themselves died of phthisis—the victims of hereditary influence. These facts must be known before we can form any conclusion as to the conservative influence of our climate. Information obtained from different sources, yet not sufficiently connected or definite to form the basis of positive proof, lead to the belief that this influence is altogether beneficial, and that of the youth born and reared here, and who have attained the age at which hereditary disease would be likely to manifest itself, comparatively few have as yet shown any signs of phthisical development. This is evidently true of those raised in localities presenting favorable climatic conditions.

LOCAL DISEASES.

Among the third class, order 3, pneumonia and bronchitis arrest attention as the cause of a large number of deaths—599; under 1 year, 98; 1 to 5 years, 98; total under 5 years, 196. The "sickness" reports received seem to indicate some relation between the meteorological condition and these diseases. In January, during the rainy season, with its humid atmosphere, pneumonia was reported prevalent in several localities, and epidemic in Vallejo, and in or near Redwood City, in San Mateo County. In February, with the continuance of similar climatic conditions, the same reports were made, with the addition of Woodland, where it was epidemic as a sequel of measles. March—the same. During this time, bronchitis was generally prevalent, and influenza reported from nearly all the localities heard from.

From April to September, there was a marked decrease in the prevalence of these diseases. In September, with its warm days yet chilly nights, and gradually increasing atmospheric humidity, the disease again more generally developed itself, and thus continued to the end of the year. During these latter months, both pneumonia and bronchitis occupied prominent places in the mortality table.

The fourth order of this class includes the diseases of the digestive organs, with a mortality of 437; under 1 year of age, 92; 1 to 5 years, 41; total under 5 years, 133. Of the total at all ages, 178 were of foreign nativity—nearly 41 per cent.

DISEASES OF THE NERVOUS SYSTEM.

The first order of the third class reveals the fact of 718 deaths; under 1 year, 185; 1 to 5 years, 131; total under 5 years, 316. Of the total, 166 were by convulsions, and of these, 113 were under 1 year of age, and 43 from 1 to 5 years, leaving only 10 for ages above 5. More than 11 per cent. of the mortality by all causes during the year are recorded as dying of diseases of the nervous system. The mortality was confined mainly to the large cities. Thus there were reported from San Francisco, 540; Sacramento, 37; Oakland, 48; San José, 25; Los Angeles, 21, and Marysville, 11; total, 682, or 95 per cent. Arranged according to the nativities, 355 were born on the Pacific coast, 125 Atlantic, 231 foreign, and 7 unclassified.

Speculation upon the causes of this large mortality is idle, without reliable data, yet it affords a theme in the consideration of which the imagination might easily find exhaustless occupation.

In the third class, second order, we find heart disease and aneurism credited with 369 deaths, of which 314 are due to the former cause. By the same cause, we have under 1 year, 18; 1 to 5 years, 10; total under 5 years, 28. Of the nativities there were: of heart disease, 171, of foreign birth, and of aneurism, 33; or 54.5 per cent of the total deaths by the former, and 60 per cent of the latter. The deaths by heart disease include 63 born on the Pacific Coast, of whom 48 were under 20 years of age. The deaths by these two causes are not much in excess of what is observed as the average for three years, at least, in some of the principal cities from which complete and reliable returns have been received.

In 1877, there were in San Francisco 224 deaths by this class; in Sacramento, 9; in Marysville, 3; in Los Angeles, 9; total, 245.

In 1878, San Francisco gave 251; Sacramento, 19; Marysville, 6; and Los Angeles, 13; total, 289.

In 1881, San Francisco, 241; Sacramento, 14; Marysville, 7; and Los Angeles, 16; total, 278; average for three years, 270.6.

In the second order of the fourth class, we find puerperal diseases alone. The deaths number 46; 8 representing natives of California and 25 foreigners.

In the third order, we have deaths by old age numbering 160; 9 being Californians by birth, and 109 of foreign birth. One hundred and nine of the decedents are reported from San Francisco, and of the remaining 51, 31 are recorded in five cities which contain a considerable Mexican or half-breed population. Thus, Los Angeles returns 8, Santa Barbara, 6, San Bernardino, 5, Ventura County, 4, and San José, 8. Some of the old Mexican population live to an extreme age. Several instances have been reported from Los Angeles. During the year under review one Gabriel is reported to have died at the age of 120 years; another at 102 years. Such extreme ages are to be accepted with some degree of allowance for error. It is sufficient to admit the fact that some of them do live to a great age, having attained maturity before the settlement of the country by the Americans. The pertinent question arises: Will the same be said of those among them now growing up to adult age? Or will the new circumstances in which they are placed, the new associations which surround them, and the habits of dissipation they have acquired, fit them rather to become the early victims of disease?

For further information concerning the mortality of 1881, the reader is referred to the accompanying tables:

TABLE NO. 1.

Report of Deaths, arranged according to Diseases, Sexes, Ages, and Nativities, from January 1 to December 31, 1881.

CAUSES OF DEATH.	Total	SEXES.			AGES.										NATIVITIES.			
		Male	Female	Unascertained	Under 1 year	1 and under 5 years	5 and under 10 years	10 and under 20 years	20 and under 30 years	30 and under 40 years	40 and under 50 years	50 and under 60 years	60 and under 100 years	Unascertained	Pacific States	Atlantic States	Foreign Countries	Unascertained
I.—ZYMOTIC OR EPIDEMIC.																		
Cholera Morbus	6	6	----	----	----	----	1	----	----	----	2	2	1	----	----	4	2	----
Cholera Infantum	121	63	55	3	93	26	----	----	----	----	----	----	----	2	119	1	----	1
Diarrhea	39	25	10	4	21	8	----	1	----	1	1	----	4	3	30	3	4	2
Dysentery	28	17	10	1	7	6	----	2	4	1	3	3	1	1	13	7	7	1
Smallpox	75	51	23	1	8	15	9	3	20	7	5	3	2	3	38	13	23	1
Measles	18	5	11	2	6	8	1	----	----	----	----	----	1	2	10	6	2	----
Scarlatina	26	12	14	----	2	19	5	----	----	----	----	----	----	----	26	----	----	----
Diphtheria	87	40	45	2	4	48	28	4	----	1	----	----	1	1	73	10	4	----
Croup	41	29	12	----	10	23	7	----	----	1	----	----	----	----	38	2	1	----
Whooping-Cough	34	14	18	2	13	18	3	----	----	----	----	----	----	----	32	2	----	----
Erysipelas	19	11	8	----	4	----	----	----	----	3	4	2	5	1	3	3	13	----
Fevers—Typhus, Malarial	28	12	15	1	----	3	3	4	9	3	2	----	3	1	9	4	15	----
Typhoid	179	92	85	2	2	14	13	31	55	26	7	11	8	12	67	42	70	----
Remittent and Intermittent	38	25	10	3	3	7	2	3	5	2	2	5	7	2	17	10	11	----
Cerebro-Spinal	49	22	25	2	11	17	10	2	----	5	1	1	----	2	36	6	7	----
Syphilis	23	13	10	----	7	3	----	----	4	5	2	2	----	----	9	2	12	----
Alcoholism (direct or remote) including Delirium Tremens	86	60	21	5	2	----	----	----	7	21	22	10	10	14	5	20	56	5
II.—CONSTITUTIONAL DISEASES.																		
Hydrocephalus	36	15	21	----	15	19	----	1	----	----	1	----	----	----	33	2	1	----
Tubercular Meningitis	38	21	15	2	12	16	2	1	1	4	----	1	----	1	30	3	5	----
Phthisis Pulmonalis	931	562	365	4	14	9	8	74	247	265	162	92	39	21	156	286	484	5
Marasmus	259	129	130	----	231	8	----	2	3	2	2	5	5	1	237	9	13	----
Scrofula	7	5	2	----	2	----	----	2	1	1	1	----	----	----	3	2	2	----
Rheumatism and Gout	28	17	11	----	1	----	----	2	5	3	5	7	5	----	4	10	14	----
Cancer	175	84	89	2	----	----	----	1	9	24	49	44	43	5	9	32	134	----

TABLE No. 1—Continued.

CAUSES OF DEATH.	Total	SEXES.			AGES.										NATIVITIES.			
		Male	Female	Unascertained	Under 1 year	1 and under 5 years	5 and under 10 years	10 and under 20 years	20 and under 30 years	30 and under 40 years	40 and under 50 years	50 and under 60 years	60 and under 100 years	Unascertained	Pacific States	Atlantic States	Foreign Countries	Unascertained
III.—LOCAL DISEASES.																		
Pneumonia	494	316	175	3	66	79	18	26	42	64	59	56	67	17	181	97	214	2
Pleurisy	5	3	2	----	----	----	1	----	2	----	----	----	2	----	1	----	4	----
Bronchitis	105	60	44	1	32	19	4	----	6	7	5	12	19	1	56	11	38	----
Other Diseases of Respiratory Organs	98	62	35	1	15	15	3	1	11	13	15	12	12	1	34	19	43	2
Enteritis	91	55	36	----	33	10	3	6	6	12	13	5	3	----	53	10	28	----
Gastritis	62	34	28	----	20	5	----	3	5	3	9	7	10	----	26	10	25	1
Gastro-Enteritis	26	11	15	----	7	5	1	2	3	3	2	3	----	----	16	3	7	----
Peritonitis (non-puerperal)	51	16	34	1	1	3	----	5	10	14	10	5	3	----	9	12	29	1
Diseases of the Liver	101	60	41	----	3	2	2	1	4	20	27	24	16	2	9	33	58	1
Other Diseases of Stomach and Bowels	106	58	47	1	28	16	8	8	5	4	10	13	12	2	61	14	31	----
Bright's Disease and Nephritis	97	67	28	2	----	1	1	7	14	21	13	12	26	2	10	41	45	1
Aneurism	55	49	3	3	----	----	----	----	3	11	16	16	5	4	----	21	33	1
Heart Disease	314	198	113	3	18	16	5	15	26	41	55	60	70	14	63	78	171	2
Convulsions	166	86	80	----	113	43	4	----	1	1	2	1	1	----	152	8	6	----
Other Diseases of Brain and Nervous System	552	348	203	1	72	88	18	27	29	62	72	88	93	3	203	117	225	7
IV.—DEVELOPMENTAL DISEASES.																		
Puerperal Diseases	46	----	46	----	----	----	----	3	18	18	4	----	----	3	8	12	25	1
Old age	160	78	82	----	----	----	----		----	----	----	4	153	3	7	40	109	4
V.—EXTERNAL CAUSES.																		
Suicide	96	83	12	1	----	----	----	6	14	25	22	12	15	2	11	24	60	1
All other causes not classified	1,230	868	350	12	172	79	27	58	166	239	172	126	128	63	310	196	680	44
Totals	6,226	3,782	2,379	65	1,048	642	187	301	735	933	777	644	770	189	2,207	1,225	2,711	83

TABLE NO. 2.

Number of Deaths arranged according to Sexes, Months and Ages; also the Death Rate per 1,000 per annum for the year ending December 31, 1881.

Localities.	Total.	Sexes.			Months.												Ages.										Death rate per 1,000 per annum	Number of months reported	Names of Correspondents.
		Males	Females	Unknown	January	February	March	April	May	June	July	August	September	October	November	December	Under 1 year	1 to 5 years	5 to 10 years	10 to 20 years	20 to 30 years	30 to 40 years	40 to 50 years	50 to 60 years	60 to 100 years	Age unknown			
San Francisco	4,158	2,578	1,580		343	318	304	378	313	358	363	281	375	318	348	479	768	364	112	187	500	682	546	461	527	11	17.77	12	Board of Health.
Sacramento	355	231	117	7	30	26	41	22	25	25	21	24	26	43	41	31	51	30	21	12	54	65	44	44	31	3	16.57	12	Board of Health.
Napa City	44	29	15		2	8	2	2	3	3	7	5	1	4	2	5		10	3	6	4	7	4	3	5	2	11.79	12	Board of Health.
Oakland	379	212	167		7	26	32	32	41	35	35	44	35	32	28	32	76	42	7	20	51	38	57	24	63	1	10.97	12	Board of Health.
San José	207	117	90		20	16	17	16	21	17	14	13	21	16	18	18	32	23	11	10	22	27	23	22	29	8	16.37	12	Dr. C. W. Breyfogle.
Vallejo	83	50	33		13	3	9	4	8	6	7	3	6	6	9	9	13	16	3	9	9	5	9	11	8		12.60	12	Board of Health.
St. Helena and vicinity	42	27	13	2	6	3	2	5	3	5	4	2	4	2	5	1	4	3	2	4	6	6	7	3	5	2	13.20	12	Dr. W. J. S. Dawson.
Los Angeles	267	151	116		15	22	27	19	20	20	22	23	19	27	23	30	31	49	9	19	37	32	31	21	35	3	23.55	12	Board of Health.
Downieville	14	13		1	1	1				1	1	4	1		2	3		3			1	3	4	1		2	10.00	12	Dr. Alemby Jump.
Santa Rosa	48	27	21		3	2		7	7	5	3	2	2	9	8		8	3	2	1	4	5	6	10	6	3	10.00	10	Dr. W. Finlaw.
Santa Barbara	71	33	38		4	6	6	3	4	10	11	6	6	4	5	6	19	9	4	2	8	7	5	5	12		17.75	12	Dr. C. B. Bates.
Stockton	22	15	7		12	10											3	2	1	2	3	5	1	1	2	2	12 83	2	Dr. A. T. Hudson.
Chico	65	40	25			7	3	7	9	9	6	1	6	9	3	5	17	10		4	9	8	7	6	4		14.18	11	Dr. C. C. Mason.
Folsom	18	5		13	3				2	1	1	2	4	1		4	1	2							1	14	12.00	12	Dr. F. C. Durant.
Antioch	14	2	4	8	1	1	2		2	1		3		1	3		4	5		1						4	7.00	12	Dr. M. C. Parkison.
Merced	28	19	9		4	2	2	4		4	1	3		1	3	4	2	2			2	6	4	6	6		11.20	10	Dr. H. N. Rucker.
Marysville	92	71	21		11	10	4	3	7	11	4	5	10	11	9	7		14	3	8	10	13	14	14	16		15.62	12	Dr. A. B. Caldwell.
San Mateo County	39	25	14		6	2	7	6	6	4	6	2					4	7	1	4	4	4	5	2	7	1	23.40	8	Dr. C. A. Kirkpatrick.
San Bernardino	43	31	12		3	2	3	7	3	1	4	4		1	5	10	2	5	3	5	5	6	3	6	8		11.53	11	Dr. W. R. Fox.
Shasta and vicinity	22	8	1	13	2		4	3		3		4	2		2	2		4								18	13.75	12	Dr. J. M. Briceland.
Ventura County	62	33	29		3	6	7	6	7	7	3	3	6	6	2	6	1	12	5	4	6	17	7	3	5	2	11.07	12	Dr. F. Delmont.
Nevada City	39	23	16				3	5	4	3		6	5	4	4	5	2	4								33	12.93	9	Dr. R. M. Hunt.
Lakeport and vicinity	12	1	8	3					1	1	3	1			3	3		3								9	18.00	8	Dr. H. J. Crumpton.
Grass Valley	20	3	17		7		3	2	3	1				3	1		2	4								14	5.00	8	Dr. W. C. Jones.
Watsonville	11	6	2	3							1	4		3		3	1	1								9	16.50	4	Dr. W. D. Rodgers.
Colfax	16	9	7		2	1	3		3		2	1	2	2			2	2								12	16.00	10	Dr. H. F. Rooney.
Woodland	15	8	7		3	5	1	3	3								1	3								11	15.95	5	Dr. Thos. Ross.
Davisville and vicinity	4		1	3					1		1		1	1												4	19.20	5	Dr. H. P. Miller.
Williams and vicinity	6		4	2					2	1	1	1				1		1						1		4	4.11	7	Dr. H. C. Crowder.
Santa Cruz	17	12	5						2	4	2	6	1	2			3	3								11	7.48	7	Dr. C. L. Anderson.
Dixon and vicinity	13	8	3	2			2		2				3	2	2	2	1	6								6	14.86	7	Dr. C. W. Harvey.
					501	478	484	534	499	516	523	453	536	510	526	666	1,048	642	187	301	735	933	777	644	770	189	13.65		

TABLE NO. 3.

Number of Deaths from all Causes in each Locality reporting, with the Nativities, Ages and Sexes.

Diseases.	Localities.																															Sexes.				Ages.										Nativities.			
	San Francisco	Sacramento	Napa City	Oakland	San Jose	Vallejo	St. Helena and vic.	Los Angeles	Downieville	Santa Rosa	Santa Barbara	Stockton	Chico	Folsom	Antioch	Merced	Marysville	San Mateo	San Bernardino	Shasta	Ventura	Nevada City	Lockport and vic.	Grass Valley	Watsonville	Colfax	Woodland	Davisville	Williams	Santa Cruz	Dixon	Totals	Male	Female	Unascertained	Under 1 year	One to 5 years	Five to 10 years	Ten to 20 years	Twenty to 30 years	Thirty to 40 years	Forty to 50 years	Fifty to 60 years	Sixty to 100 years	Unascertained age	Pacific	Atlantic	Foreign	Unascertained
Zymotic.																																																	
Cholera morbus	1	1		1		3																										6	6					1				2	2	1			4	2	
Cholera infantum	56	7		7	7		3	8	2	1		1	16	1	1		3	3				2				1	1			1		121	63	55	3	93	26								2	119	1		1
Diarrhea	16	3	1	6	1	1		1		1	5				2					1		1										39	25	10	4	21	8		1		1	1		4	3	30	3	4	2
Dysentery	14	2		1			1	4			1			1					2						1				1			28	17	10	1	7	6		2	4	1	3	3	1	1	13	7	7	1
Smallpox	68			1			4																								2	75	51	23	1	8	15	9	3	20	7	5	3	2	3	38	13	23	1
Measles	9	1		1				1				1												5								18	5	11	2	6	8	1						1	2	10	6	2	
Scarlatina	12			1		9		4																								26	12	14		2	19	5								26			
Diphtheria	53	15		5	2			3		1					3					2				1	2							87	40	45	2	4	48	28	4		1			1	1	73	10	4	
Croup	21	4	1	4	3			1					1						4		2											41	29	12		10	23	7			1					38	2	1	
Whooping-cough	14		1	6	2	5				1			2		2																1	34	14	18	2	13	18	3								32	2		
Erysipelas	11	1		4		1								1					1													19	11	8		4					3	4	2	5	1	3	3	13	
Fevers—Typho-malarial	11	8		4				3				1		1																		28	12	15	1		3	3	4	9	3	2		3	1	9	4	15	
Typhoid	90	12	3	14	10	2	3	18	1	1	5		3		2		2	1			1	3		3	2		1	1		1		179	92	85	2	2	14	13	31	55	26	7	11	8	12	67	42	70	
Remittent and Intermittent	8	5	1	1	1			10						2			10															38	25	10	1	3	7	2	3	5	2	2	5	7	2	17	10	11	
Cerebro-spinal	30	3		2			1			1							1			1	6	1							1		2	49	22	25	2	11	17	10	2		5	1	1		2	36	6	7	
Syphilis	22							1																								23	13	10		7	3			4	5	2	2			9	2	12	
Alcoholism	51	4	1	3			1	2	2				3	1		1	2	2		4		2				4				2	1	86	60	21	5	2				7	21	22	10	10	14	5	20	56	5
Constitutional Diseases.																																																	
Hydrocephalus	27	1		3	2	2				1																						36	15	21		15	19		1			1				33	2	1	
Tubercular meningitis	9	4		7	3	1	1	6				1								1		1								3	1	38	21	15	2	12	16	2	1	1	4		1		1	30	3	5	
Phthisis pulmonalis	596	40	6	55	52	10	9	55	2	12	10	7	9			6	17	7	9	1	14	5	1		2	1	4	1	1		1	931	562.	365	4	14	9	8	74	247	265	162	92	39	21	156	286	484	5
Marasmus	240	5		7				6			1																					259	129	130		231	8		2	3	2	2	5	5	1	237	9	13	
Scrofula	4			2															1													7	5	2		2			2	1	1	1				3	2	2	
Rheumatism	16	6		3													2		1													28	17	11		1			2	5	3	5	7	5		4	10	14	
Cancer	128	5		13	5	2		8		1	2		1				2		4	3					1							175	80	89	2				1	9	24	49	44	43	5	9	32	134	
Local Diseases.																																																	
Pneumonia	324	30	4	30	12	4	6	11	2	7	5	5	8	1		1	19	6	3	1	4	3	1		1	3	1	1			1	494	316	175	3	66	79	18	26	42	64	59	56	67	17	181	97	214	2
Pleurisy	2		1				1												1													5	3	2				1		2				2		1		4	
Bronchitis	71	5	2	6	5	2	1	7						1	1	2	1		1													105	60	44	1	32	19	4		6	7	5	12	19	1	56	11	38	
Other respiratory diseases	68	5	2	7	1	1		6		1						1		1			3						1		1			98	62	35	1	15	15	3	1	11	13	15	12	12	1	34	19	43	2
Enteritis	78	3		2	4	1		3																								91	55	36		33	10	3	6	6	12	13	5	3		53	10	28	
Gastritis	53	2		3	1			2		1																						62	34	28		20	5		3	5	3	9	7	10		26	10	25	1
Gastro-enteritis	21	1		3							1																					26	11	15		7	5	1	2	3	3	2	3			16	3	7	
Peritonitis (non-puerperal)	43	1		4				1		1																1						51	16	34	1	1	3		5	10	14	10	5	3		9	12	29	1
Diseases of liver	72	7		2	5		1	5			1		2			1	4				1											101	60	41		3	2	2	1	4	20	27	24	16	2	9	33	58	1
Other diseases of stomach and bowels	51	8	2	12	3	1		8		1			4				2	1	2		10									1		106	58	47	1	28	16	8	8	5	4	10	13	12	2	61	14	31	
Bright s disease, and nephritis	66	6		7	1	4		3			2						1		2		1	1							1	2		97	67	28	2		1	1	7	14	21	13	12	26	2	10	41	45	1
Aneurism	42	1		3	2	2		1				1								2		1										55	49	3	3					3	11	16	16	5	4		21	33	1
Heart disease	199	13	3	25	13	5	2	15		3	3		1			1	7	1	2	5	5	4	1	3			1				1	314	198	113	3	18	10	5	15	26	41	55	60	70	14	63	78	171	2
Convulsions	142	4		6	3	2		5		4																						166	86	80		113	43	4		1	1	2	1	1		152	8	6	
Other dis. of brain and nervous system	398	33	2	42	22	7		16		2	4		3			5	11		2		4		1									552	348	203	1	72	88	18	27	29	62	72	88	93	3	203	117	225	7
Developmental Diseases.																																																	
Puerperal diseases	33	1	1	2	1			2						1				1			2	2										46		46					3	18	18	4			3	8	12	25	1
Old age	109	4		2	8	4	2	8			6		1			3		4	5		4											160	78	82									4	153	3	7	40	109	4
External Causes.																																																	
Suicide	66	7		6	3	1	3	1		2		1	2			1						1										96	83	12	1				6	14	25	22	12	15	2	11	24	60	1
Other causes unclassified	813	97	13	65	33	3	3	42	5	6	25	9	9	8	3	6	8	12	3	1	5	12	8	8	2	6	6	1	1	7	3	1,230	868	350	12	172	79	27	58	166	239	172	126	128	63	310	196	680	44
Totals	4,158	355	44	379	207	83	42	267	14	48	71	22	65	18	14	28	92	39	43	22	62	39	12	20	11	16	15	4	6	17	13	6,226	3,782	2,379	65	1,048	642	187	301	735	933	777	644	770	189	2,207	1,225	2,711	83

TABLE NO. 4.

Showing the total Deaths by twenty-three Principal Diseases in localities which have reported over six months in the year, together with the Deaths under one year and under five years of age—1881.

Localities.	Total Deaths	Deaths under one year of age	Deaths under five years of age	Cholera Infantum	Cholera Morbus	Diarrhea and Dysentery	Smallpox	Measles	Scarlatina	Diphtheria	Whooping-Cough	Croup	Erysipelas	Typhoid Fever	Malarial Fever	Typho-Malarial Fever	Cerebro-Spinal Fever	Tubercular Meningitis	Consumption	Acute Pneumonia	Acute Bronchitis	Pleurisy	Heart Diseases	Aneurism	Cancer	Alcoholism	Number of Months Causes Reported
San Francisco	4158	768	364	56	1	30	68	9	12	53	14	21	11	90	8	11	30	9	596	324	71	2	199	42	128	51	12
Sacramento	355	51	30	7	1	5		1		15		4	1	12	5	8	3	4	40	30	5		13	1	5	4	12
Napa	44		10			1					1	1		3	1				6	4	2	1	3			1	12
Oakland	379	76	42	7	1	7	1	1	1	5	6	4	4	14	1	4	2	7	55	30	6		26	3	13	3	12
San José	207	32	23	7		1				2	2	3		10	1			3	52	12	5		13	2	5		12
Vallejo	83	13	16		3	1			9		5		1	2				1	10	4	2		5	2	2		12
St. Helena	42	4	3	3		1	4							3			1	1	9	6	1	1	2			1	12
Los Angeles	267	31	49	8		5		1	4	3		1		18	10	3		6	55	11	7		15	1	8	2	12
Downieville	14	2	3	2										1					2	2						2	12
Santa Rosa	48	8	3	1		1	1			1	1			1			1		12	7			3		1		10
Santa Barbara	71	19	9			6								5					10	5			3		2		12
Chico	65	17	10	16							2	1		3					9	8					1	3	11
Folsom	18	1	2	1		1							1		2	1				1	1					1	12
Antioch	14	4	9	1		2				3	2			2							1						12
Merced	28	2	2																6	1	2		1			1	10
Marysville	92		14	3										2	10		1		17	19	1		7		2	2	12
San Mateo	39	4	7	3										1					7	6			1			2	8
San Bernardino	43	2	5			2						4	1						9	3	1	1	2		4		11
Shasta	22		4			1				2							1	1	1	1			5	2	3	4	12
Nevada City	39	2	4	2		1								3			1	1	5	3			4	1		2	9
Lakeport	12		3																1	1			1				8
Grass Valley	20	2	4					5		1				3									3				8
Colfax	16	2	2	1															1	3						4	10
Santa Cruz	17	3	3	1										1				3								2	7
Dixon	13	1	6				2				1						2	1	1	1			1			1	7
Williams	6		1			1									1				1								

COUNTY HOSPITALS.

I am compelled again to allude to the small number of hospitals from which reports have been received. Blanks were sent at an early date to all known hospitals, but from some of the most important no reply has been received. Among these is the large and well conducted hospital of San Francisco. All these institutions possess more than a local interest. They are capable of furnishing facts interesting to the entire State. They are the only possible medium through which we can obtain a knowledge of the prevalence of disease in many portions of the State. They reflect, to some extent, the consideration paid to the unfortunate class of patients who commonly resort to them, by the people of the State, and the provision made for their care. They teach us, in a general way, the number of indigent sick among us, the classes of disease from which they suffer, and the death rate. Yet, of the different hospitals only seventeen have forwarded a report.

TABLE No. 1.

Report to the State Board of Health of the Indigent Sick, treated in the following Hospitals, for the year ending December 31, 1881.

NAME OF HOSPITAL.	Number of months reported	Total on hand at commencement of year	Total Admitted	Discharged Cured	Discharged	Died	Percentage of Deaths	Remaining under Treatment	Name and Residence of Physician.
State Insane Asylum	12	1107	173	74	96	91	7.1	1093	G. A. Shurtleff, M. D., Stockton, California.
Napa Asylum for the Insane	12	937	534	130	273	129	8.7	------	E. T. Wilkins, M. D., Napa, California.
Tehama County Hospital	12	23	92	95	100	4	3.5	11	J. M. West, M. D., Red Bluff, California.
Fresno County Hospital	12	11	109	65	12	16	13.3	16	Lewis Leach, M. D., Fresno, California.
Sierra County Hospital	12	18	37	19	13	9	16.3	13	Alemby Jump, M. D., Downieville, California.
Nevada County Hospital	12	------	159	50	43	14	8.8	52	R. M. Hunt, M. D., Nevada City, California.
Santa Barbara County Hospital	12	3	14	5	4	2	11.7	6	S. B. P. Knox, M. D., Santa Barbara, California.
San Bernardino County Hospital	12	37	56	21	28	7	7.5	35	T. C. Peacock, M. D., San Bernardino, California.
Sacramento County Hospital	12	124	765	559	85	76	8.4	169	Geo. A. White, M. D., Sacramento, California.
San Luis Obispo County Hospital	12	14	38	27	1	14	27.	10	R. Parkhurst, M. D., San Luis Obispo, California.
Santa Cruz County Hospital	12	21	45	------	39	8	12.1	28	Benjamin Knight, M. D., Santa Cruz, California.
Shasta County Hospital	12	25	62	20	31	15	17.2	21	J. M. Briceland, M. D., Shasta, California.
San Joaquin County Hospital	12	79	335	------	304	31	7.2	79	A. T. Hudson, M. D., Stockton, California.
Santa Clara County Hospital	12	85	229	128	70	33	10.5	83	Benjamin Cory, M. D., San José, California.
Sonoma County Hospital	12	21	178	108	166	27	13.5	33	B. S. Young, M. D., Santa Rosa, California.
El Dorado County Hospital	12	51	72	------	38	18	.14.6	------	H. W. A. Worthen, M. D., Placerville, California.
Los Angeles County Hospital	12	38	243	------	221	34	13.9	40	Name not stated.

TABLE NO. 2.

Principal Diseases reported from Hospitals.

Name of Hospital.	Location.	Diseases of Respiratory Organs.				Fevers.				Diseases, Brain and Nervous System, including Insanity	Brights' Disease and Nephritis	Diseases of the Liver	Diarrhea and Dysentery	Other Diseases of the Stomach and Bowels	Diphtheria	Heart Disease	Aneurism	Erysipelas	Rheumatism and Gout	Alcoholism	Cancer	Venereal Diseases	Other Diseases	Accidents	Smallpox
		Consumption	Pneumonia	Bronchitis	Other Diseases of the Respiratory Organs	Typhoid and Typho-Malarial	Remittent	Intermittent	Cerebro-Spinal																
State Insane Asylum	Stockton	----	----	----	----	----	----	----	----	1280	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Napa State Asylum for the Insane	Napa	----	----	----	----	----	----	----	----	937	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
El Dorado Co. Hospital	Placerville	----	13	----	4	----	15	----	----	10	1	2	----	1	----	1	----	----	9	----	1	4	20	1	----
Sacram'nto Co. Hospital	Sacramento	71	11	----	8	12	(142)		----	60	----	6	5	14	----	13	4	9	62	35	2	116	247	71	1
Shasta Co. Hospital	Shasta	11		----	3	----	----	13	----	8	----	----	----	4	----	2	4	----	11	----	1	----	17	1	----
San Joaq'in Co. Hospital	Stockton	17	6	6	13	6	----	31	----	45	----	6	4	18	----	1	----	1	42	20	3	56	84	44	----
Santa Clara Co. Hospital	San Jose	31	10	10	6	6	8	5	----	32	4	1	3	8	----	6	----	3	31	7	2	18	53	25	----
Sonoma Co. Hospital	Santa Rosa	12	6	1	3	----	----	3	----	26	----	1	1	8	1	4	----	2	16	7	2	----	26	42	5
S.L. Obispo Co. Hospital	San Luis Obispo	6	1	2	----	----	----	----	----	4	----	3	----	2	----	1	----	----	9	1	----	1	4	4	----
S. Barbara Co. Hospital	Santa Barbara	1	1	1	----	1	----	----	----	1	1	1	----	----	----	----	1	----	1	----	----	----	3	2	----
Santa Cruz Co. Hospital	Santa Cruz	----	1	----	----	----	----	----	----	4	----	----	----	----	----	----	2	1	3	3	4	----	18	6	----
S. Ber'dino Co. Hospital	San Bernardino	4		----	----	----	----	----	----	3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tehama Co. Hospital	Red Bluff	1	3	2	1	----	(49)		----	6	1	1	----	1	----	1	2	1	5	----	----	3	14	12	----
Fresno Co. Hospital	Fresno	4	7	7	5	11	(20)		----	7	3	1	5	1	----	6	----	5	13	----	----	7	11	7	----
Sierra Co. Hospital	Downieville	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nevada Co. Hospital	Nevada City	3	3	5	3	5	5	9	----	22	----	----	1	5	----	1	----	1	17	3	2	5	28	13	----
L. Angeles Co. Hospital	Los Angeles	----	12	----	46	(43)			----	43	----	----	1	10	----	10	----	4	21	1	----	4	36	16	----

TABLE NO. 3.

Deaths reported from Hospitals.

Name of Hospital.	Location.	Diseases of Respiratory System.				Fevers.				Diseases of the Brain and Nervous System	Bright's Disease and Nephritis	Diseases of the Liver	Diarrhea and Dysentery	Other Diseases of the Stomach and Bowels	Diphtheria	Heart Disease	Aneurism	Rheumatism and Gout	Alcoholism	Erysiplas	Cancer	Venereal Disease	Smallpox	Other diseases	Accidents
		Consumption	Pneumonia	Bronchitis	Other Diseases of the Respiratory Organs	Typho-Malarial and Typhoid	Remittent	Intermittent	Cerebro-Spinal																
State Insane Asylum	Stockton	21	1	----	1	----	----	----	----	44	----	2	2	1	----	----	----	----	1	1	1	2	----	14	----
Napa Asylum for the Insane.	Napa	9	----	----	4	----	----	----	----	71	----	----	----	5	----	----	----	----	----	2	2	----	----	21	----
El Dorado County Hospital	Placerville	----	4	----	1	----	2	----	----	1	1	1	----	1	----	1	----	----	----	----	1	----	----	5	----
Sacramento Co. Hospital	Sacramento	28	3	----	----	4	2	----	----	7	2	1	----	4	----	7	3	----	2	1	----	2	----	7	1
Shasta County Hospital	Shasta	6	----	----	----	----	----	----	----	1	----	----	----	----	----	2	3	----	----	----	1	----	----	1	----
San Joaquin Co. Hospital	Stockton	5	3	----	----	2	----	----	----	8	----	4	----	1	----	1	----	----	----	----	2	----	----	2	----
Santa Clara County Hospital.	San José	15	1	----	----	3	----	----	----	3	1	----	1	----	----	1	----	1	----	----	2	----	----	----	----
Sonoma County Hospital	Santa Rosa	5	----	----	----	----	----	----	----	3	----	----	----	1	1	2	----	----	----	----	1	----	1	5	8
San Luis Obispo Co. Hospital.	San Luis Obispo.	1	----	1	----	----	----	----	----	----	----	3	----	1	----	1	----	1	1	----	----	----	----	----	----
Santa Barbara Co. Hospital	Santa Barbara	----	----	----	----	----	----	----	----	----	1	----	----	----	----	----	1	----	----	----	----	----	----	----	----
Santa Cruz County Hospital.	Santa Cruz	----	1	----	----	----	----	----	----	----	----	----	----	2	----	----	1	----	----	----	4	----	----	----	----
San Bernardino Co. Hospital.	San Bernardino	4	----	----	----	----	----	----	----	3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tehama County Hospital	Red Bluff	----	----	----	----	----	----	----	----	----	----	1	----	----	----	1	1	----	----	----	----	----	----	----	----
Fresno County Hospital	Fresno	2	----	2	----	----	----	----	----	4	3	1	----	----	----	4	----	----	----	----	----	----	----	----	----
Sierra County Hospital	Sierra	1	2	----	----	----	----	----	----	1	1	----	----	----	----	2	----	----	1	----	----	----	----	1	----
Nevada County Hospital	Nevada City	2	----	----	1	1	----	----	----	----	----	----	----	----	----	1	----	1	1	----	----	2	----	5	----
Los Angeles Co. Hospital	Los Angeles	----	1	----	5	(	5	)	----	9	----	----	----	----	----	2	----	2	1	----	----	1	----	6	2

In the fifteen hospitals reporting, exclusive of the two asylums for the insane, there were recorded 361 patients under the respiratory class, or 161 of phthisis, 74 of pneumonia, 34 of bronchitis, and 92 of other diseases of the class, with 104 deaths—28.8 per cent. Many of the cases were doubtless brought into the hospitals in the latter stages of disease, and a considerable number, among those dying by phthisis especially, had been old inmates of the institutions. How many of those registered under "Other diseases of the respiratory organs" are subjects of phthisis can be conjectured only. In our large hospitals, having an aggregate of over 200 admissions, and nearly sixty cases of sickness belonging to this general class, not a single case is set down to phthisis, but nearly fifty to "lung disease."

Of the febrile class 380 cases are reported, 46 being classified as typhoid and typho-malarial, 291 as remittent and intermittent fevers, and 43 as simply "fevers." By the former the deaths reached 10, or 21 per cent., by the latter 4, or 1.37 per cent.

Two hundred and sixty-three cases are assigned to diseases of the brain and nervous system, with 31 deaths, or 15.2 per cent.

Twenty-two cases of disease of the liver, many of them being classed as cirrhosis, are responsible for 13 deaths, or about 59 per cent.

Heart disease occasioned 25 deaths out of 46 cases admitted, or 54.3 per cent.; erysipelas one death out of 27 cases treated, or 3.7 per cent.; alcoholism, six deaths and 77 cases, including delirium tremens, or 7.8 per cent.; smallpox, treated at contagious disease hospitals, six cases with one death, or 16.6 per cent.

The deaths resulting from accidents are few in number, eleven out of 242 cases, or 4.5 per cent. Venereal diseases aggregate 214 cases, with five deaths, or 2.3 per cent.

The above, as just observed, are exclusive of the cases treated in the asylums for the insane, into which all the patients are admitted for insanity. Most of the diseases mentioned as having been treated there were developed after admission, or were not mentioned in the commitments.

Further information regarding the hospitals reporting for the past year may be gained from the following statements forwarded by the Superintendents:

The location of the State Asylum for the Insane, at Stockton, is within the limits of said city, its grounds extending from Park street to North street, north and south, and from California street to Sacramento street, east and west, embracing one hundred and seven (107) acres of land.

There is sufficient fall for the drainage of the rain, or surface water, in the natural incline of the land, and sufficient for sewage drainage by extending pipes to the permanent water course, or into the tule marsh on the west.

The sewage at present is taken away from the building in pipes, supplied with a flow of clear water, and connected outside with extended wooden conduits; but it is desirable and in contemplation to have the sewage carried in pipes to tide water, which has been delayed in the expectation that the city would institute some general plan of sewerage with which the asylum might connect.

Ventilation in the principal buildings is good.

The supplies of food, clothing, and fuel are ample.

A corps of three physicians, denominated a Medical Superintendent, and Assistant Physicians, are required and maintained by law, for the medical care and treatment of the patients.

In the female department, the standard accommodations, as to room, are not less than an area of eighty square feet of floor or surface, to each bed or persons, exclusive of corridors, dining-rooms, water-closets, bath-rooms, lavatories, and clothes-rooms.

The two.wards, called mad-houses, so long complained of as unfit for use, have been taken down and abolished, and the patients formerly kept there are now in the new addition and well accommodated.

The water supply of the institution is good, both in quality and quantity, but it all has to be raised by pumps, which is an important item of expense.

The new building was occupied on the first of April, 1882. It serves, as was designed, to raise the standard of accommodation, rather than to increase the capacity of the institution.

The institution has been occupied exclusively as a hospital and asylum for the insane since July 1, 1853—a period of twenty-nine years.

G. A. SHURTLEFF,
Medical Superintendent.

EL DORADO COUNTY HOSPITAL.

The location of the Hospital is elevated and healthy; the sewerage and ventilation are good; supplies are furnished by contract. The surface to each patient at present is not large, owing to the great number coming in during the year. The paupers are increasing at such a rate that the building will have to be enlarged. The water supply is sufficient and good.

SANTA CLARA COUNTY HOSPITAL.

The Santa Clara County Hospital is located three miles from San José and two miles from Santa Clara. The Hospital building proper is three stories in height, containing eight wards, exclusive of office, parlor, nurses' rooms, drug store, kitchen, and dining room. The two main wards where the very sick are mostly kept, on the first and second floors, are twenty-eight by ninety feet each, containing twenty beds to each ward; the ceilings are sixteen feet in the clear. The six smaller wards have the same surface space allotted to each bed, being one hundred and twenty-six feet. There are a number of outside one-story buildings for the accommodation of the convalescents and the poor, in close proximity to the main building. Our Hospital is not only a Hospital, but a poorhouse as well. The pest house is located about four hundred yards from the main building, with no occupant during the year of this report. The Hospital is furnished with artesian water elevated by a steam engine and windmills, and conveyed to the different wards through iron pipes.

The Hospital is well ventilated by plenty of windows, doors, fire places, and ventilators. The sewerage is good, being conveyed from the building through earthen pipes to a cesspool about two hundred yards distant. The supplies of all kinds are furnished by contract subject to my approval.

I visit the institution every second day, and oftener when necessary; and I think I have been something of a success during the three years I have had control. But I give to my excellent partner, Doctor Thomas Kelley, who has very much assisted, much credit for my success. And to J. B. Church, who has been Superintendent of the institution for eight years, I am vastly indebted. The farm upon which our hospital is located, contains one hundred and thirty acres, and we raise much that is used in the institution, as vegetables, grain, hay, meat, etc.

Respectfully,

BENJAMIN CORY.

SONOMA COUNTY HOSPITAL.

Condition of hospital is good. Location in center of the town on one and a half acres of land. Sewage pipes from all parts of the building discharge into cesspools fifty feet from buildings. Ventilation good, and amply sufficient. Supplies excellent, and furnished by contract. Medical attendance daily; physician appointed by Supervisors, and has full control. Surface area to each patient, about seventy square feet. Length of time occupied, twenty years. Water supply from City Water Works, which is obtained from pure mountain streams. Vegetables are raised on the grounds in sufficient quantities to supply the hospital with fresh ones. The Steward has the use of the grounds, and boards and cares for the sick for so much per diem; he also lives in the building.

The institution has capacity for fifty beds. Consumptive ward separate from ward for other diseases. We also have a County Farm, at which there are thirty-two inmates, the deaths at which are counted in this report.

B. S. YOUNG.

TEHAMA COUNTY HOSPITAL.

Location for hospital desirable; no sewerage; as to ventilation, the air has few obstructions; supplies limited; attendance, Physician and Steward; surface area to each patient, practically without limit; time occupied, the records say not; water supplied by well; general condition deplorable—in keeping with the intelligence of an average County Supervisor.

J. M. WEST, M. D.

Dr. Lewis Leach gives the following account of the Hospital in Fresno County:

The Fresno County Hospital was built upon a block of ground containing three and one half acres, and said block is four blocks from Court-house. The main building is seventy-five feet in length by twenty-five in breadth, with two wings, each twenty-four by thirty, and seventeen feet in hight, separated by a hall twelve feet in width. The rear forty-six feet of the main building is used for kitchen, dining-room, and two sleeping rooms. The anterior portion of the main building contains dispensary and one room for general use. The two wards above spoken of are said to contain (builder's estimate) 16,200 cubic feet of air, and would give eight patients per ward over 2,000 feet each. The wards are warmed by fire-places, one in each ward; ventilation from transoms and windows; sewerage good as far as tested. The building has been in use eighteen months. Supplies are the best that the market affords. Water is furnished by the Fresno Water Company, is raised by steam power from a well eighty feet in depth, and conveyed to the hospital in iron pipes. The entire management of the hospital is with the County Physician, who has discretionary power to purchase whatever he may deem necessary for the benefit of his patients. He also furnishes his own medicines, and at the end of each month makes out his bill for medicines furnished and services rendered, which, with all other bills, are placed before the Board of Supervisors, and have always been allowed.

SIERRA COUNTY HOSPITAL.

The hospital is located on the bank of the north fork of the North Yuba river, and occupies two acres of level ground, through which there is a public road. The location is about thirty feet above high-water mark, and has good drainage. The house was built in 1880, and was first occupied in December of that year. It will accommodate twenty-four patients without being crowded. Sewage goes direct into the river. The water supply is from a large creek, where there is no hydraulic mining, and is conducted through a wooden flume the distance of one half mile. Surface area to each patient 101 feet. The physician is required to visit the house at least once each day. If he is unable to attend he must have some competent physician to attend in his place. Supplies are purchased on bids, to be furnished as required for use. The physician is Superintendent, and all supplies are under his supervision. The employés are hired by the physician and are completely under his control.

ALEMBY JUMP, M. D.

Since the last report of the State Board of Health, an improvement has been made in a number of the hospitals, and one or more new and well-arranged buildings erected. I regret that no report has been received of them. The plans, presented in the last report of the Board, have been found to supply a much needed want.

The statistics of the Asylums for the Insane are interesting, insomuch especially as they are indicative of the increase of insanity in the State. In the report of the State Board of Health, for the year ending December 31, 1878, it was shown that there were in the two institutions, devoted to the purpose an aggregate, at its close, of 1888 patients; December 31, 1880, 1955 inmates; and at the end of December 1882, 2073. From January 1, 1881, to December 31, 1882, there were admitted to the State Asylum, at Stockton, 173 insane persons, and to the institution at Napa, 534, making a total of admissions, during the year, amounting to 707. At the latter asylum, the present year was commenced with 1070 inmates; up to June 30th, there had been 295 admissions, making the total number on that date 1172, or an increase in 3½ years, exclusive of those who were discharged or who died, during that time, of 458. Probably, nearly the same rate of increase obtains at Stockton.

It is not surprising that the asylums for the insane are crowded, over-filled, and that the expedient of "doubling up," or putting two patients in a room, has been, by compulsion, resorted to—a system recognized everywhere, and by no one more sensibly than by the distinguished gentlemen at the head of these institutions in California, as being highly detrimental to those under treatment, and subversive of good government.

Additional accommodations have been provided during the past year for each of the asylums; at Stockton, by the completion, in April last, of a large new building; at Napa, by the improvement and remodeling of the attic story, and other unoccupied space within the building, making quarters for perhaps 250 patients. Changes thus effected, though only partially supplying the wants of the latter asylum, afford great relief to the old wards, and will enable the authorities, for a short time, to provide accommodations for the stream of humanity seeking admission. The wards are well ventilated and comfortable. Such additions give but temporary relief. Permanent increase of room is urgently needed, and this should be effected, not by additions to the present building, but by the erection of a new, distinct brick structure, of moderate capacity, plain, without costly ornamentation, yet capable of accommodating classes of patients which should never be mingled with others, as for example the *chronic* insane. Such a building could be erected without great cost. In the Coombs tract there is ground enough for two or more such buildings, eligibly situated, with an abundant water supply. One such building would prove of great value now; in a short time it will become a necessity. It is demanded, not alone for convenience, but by the dictates of humanity. It is due to the State, and to that philanthropic sentiment which has at all times distinguished its treatment of its unfortunate wards. As a single example of the crowded condition of the asylum at Napa, it was stated that the authorities had, at one time, been compelled to place twenty-two patients in a place intended for only eight, and nearly all of these were demented and filthy. Nor is the above the only instance in which over-crowding has become necessary.

Small, cheap buildings are in many ways preferable to large ones. They are safer from fire; they admit of multiplication as occasion requires without great expenditure. They permit the separation of different classes of insane patients from each other more effectually than by the wards of a large building. In our asylums there are constantly a large number of patients whose mental condition is such as not to require restraint—imbeciles, idiots, and the like, and, sometimes, not a few harmless but weak-minded individuals who are committed to the asylum to avoid the trouble of being cared for at home. Probably there are more of this class in California, in proportion to all commitments, than in other States, in consequence of the system prevailing here. It is, in fact, a source of just complaint that persons are continually sent to the asylum for the insane who, by no plausible reason, can be considered proper subjects for confinement; yet, coming under the sanction of judicial order, the authorities have no power to decline to receive them. The eccentricities of age are, for convenience sake, magnified into evidences of insanity, and the meaningless vagaries of the imbecile are tortured into unerring indications of dementia. For this large class, promiscuous contact in the wards or recreation grounds of the asylum cannot be otherwise than injurious.

Again, it is physically impossible for three medical attendants to devote sufficient time to the study and investigation of 1,000 patients daily. It would require, allowing even five minutes to each patient, three hours more than the twenty-four constituting a day, for each of the three physicians to "go the rounds." Suppose that of these 1,000 patients 500 were incurable, requiring no study or examination, an equal number will still remain whose cases may afford a ray of hope. Again, allowing only five minutes for the investigation of each case, there would still be required thirteen hours of constant daily labor, without counting the time consumed in passing from one patient to another, and from ward to ward.

Without pursuing this subject further, it is proper to mention a present defect in the Napa Asylum, liable to become a serious one.

It consists in the arrangement of the water-closets and their ventilation. The design was to secure a downward ventilation from the closets through the chimney leading from the engine-room; but this has proved a failure. When the water is at all scarce, or the wind is favorable, foul odors are quite perceptible. Nor this alone, but the lives of over 1,200 individuals are constantly jeopardized by exposure to sewer gas, or to the disease germs it is the medium of conveying. Already, according to the statistical report received, dysentery has prevailed there during the year, occasioning five deaths. It is said to have seemed at one time to be likely to assume the proportions of an epidemic; due, according to the best judgment, to this cause. Is it policy to wait until typhoid fever, or sewage fever, shall decimate the wards?

JAILS AND PRISONS.

The condition of our jails, especially their sanitary condition, presents a subject of sufficient importance to receive the attention of the State Board of Health. It is bad enough for the unfortunate subjects of penal discipline to be subjected to confinement within the walls of a jail, bad enough in a sanitary point of view, under the very best circumstances, though necessary as a punishment for crime and for the protection of society; but however degraded this class of men may be, however reckless, to whatever extent they have forfeited the respect of community, and become outcasts from society, we cannot altogether ignore the fact that, as men, human beings, they have certain rights and are entitled to a certain amount of sympathy and care. The sentence of the law affects their liberties, and subjects them to a certain sort of discipline expressed or implied in the sentence itself. It goes no further. It does not exclude them from the rights which a common sentiment of humanity suggests, from the right to receive such an amount of care and attention, and such ordinary comforts as may be necessary for health, and for their physical, not to say moral well-being. To deprive them of these, which society owes to every one, rich or poor, bond or free, would be to add a punishment not contemplated by the law, nor included in the sentence of the Court.

Of these institutions the organic law requires recognition by the State Board of Health, and the rules of the Board have wisely designated them as among the subjects proper for consideration at the hands of one of its standing committees. For the purpose of obtaining accurate information as to the condition of the County Jails, the following circular was addressed to the Sheriff of each county:

Office of the State Board of Health,
Sacramento, Cal., September 29, 1881.

Mr.--------
Sheriff of --------County, Cal.:

Dear Sir: The State Board of Health desires information upon subjects embraced in the following questions. Will you be kind enough to supply the answers, by filling in the space after each question, at your earliest convenience, and return the same to the undersigned, at Sacramento?

Very truly yours,
F. W. HATCH,
Secretary State Board of Health.

QUESTIONS.

1. What are the dimensions of the inclosure for jail purposes?
2. What are the dimensions of the jail building?
3. Of what material is the building constructed?

Abstract of Answers from Sheriffs of thirty-one Counties concerning Jails of California—1881.

COUNTIES.	Dimensions of inclosure.	Dimensions of jail.	Material of jail building.	Number of cells	Cubic feet in each cell.	Prisoners in each cell.	Total prisoners	MATERIAL OF CELLS.		DEATHS.	VENTILATION.
								Iron.	Wood.	No. and Cause.	
Sacramento	140x180	80x160	Brick	24	662; 448; 4,620.	2; 4; 8; 12.	57	22	2		Iron bars on the top of cells opening into a large room, with windows and doors.
Placer	75x75	32x36	Stone	8	320	2	15	Stone		1 suicide	Grated doors.
Yuba	45x75	28x50	Brick	22	280; 960.	1 to 2; 2 to 3.	10	16	6		Grated windows.
Tehama	Block.	40x60	Brick	8	412; 9,360.	2	2	6	2		Wickets and iron bars.
San Francisco	133x63		Granite and brick	70	400; 768; 320.	2; 4.	140	Granite a	nd brick		Wickets and sky-windows.
Alameda	80x115	65x90	Brick	38	792	1 to 3.	25	Iron and	wood		Wickets and windows.
Mendocino	22x22	22x22 & wing	Brick and iron	5		1	4	Iron and	brick		Crossed iron bar doors.
San Luis *Obispo*	50x57	50x57	Brick	5	504	1	5	Iron			Wickets and *air openings.*
Santa Barbara		40x70	Stone, brick, & iron	11	216; 500; 2,250.	1 and 3.	6	Iron and	brick		Trap door, and air opening in roof of cell.
Ventura	100x50	28x20	Brick	4	494; 401.	1 and 2.	6	Iron and	brick		Perforated air openings, with opening above.
Fresno	35x55	35x55	Brick and iron	6	294	1 to 4.	7	Iron and	brick	1 suicide	Wicket door and iron bars in roof.
Santa Clara	190x120	45x45 & wing	Brick and iron	28	476; 3,328; 1,193.	2 and 6.	35	Iron			Wicket and ventilator in door—grated window in rear.
Solano		30x70	Brick and wood	14	500; 800.	3 to 6.	18	Iron, wood	and stone.		Holes in the top and ends of cells, or by iron pipe leading from cells.
San Diego	68x70	54x32	Brick and iron	5	600	2 to 4.	7	Iron			Crossed bar iron doors and windows.
San Bernardino	One acre.	60x120	Brick	12	640	1	1	Brick and	iron		Doors and windows.
Los Angeles	100x200	36x36	Brick and stone		512	2 to 4.	45	Brick and	iron	1 alcoholism	Iron doors opening halls or corridors.
Siskiyou	60x75	30x36	Brick	2	720			Iron and	wood		Wickets at top of doors, air holes at bottom.
Shasta	68x66	68x66	Brick and stone	4	1,000	1 to 4.	4	Iron and	brick		Iron grating.
San Joaquin	100x50	70x30	Brick, wood, & iron	17	800; 480.	2 to 8.	14	Wood an	d brick		Wickets in doors and window in cells.
Alpine	None.	16x24	Hewn timber	2	336			Iron			Iron barred doors.
Stanislaus		50x32	Brick and iron	7	294; 1,587.	1 to 2.	10	Iron			Wickets in doors and iron grated tops.
Mono	*200 sq. feet.*	30x60	Wood	8	*800; 1,200.*	1	4	Timber a	nd iron		Through *roof of building.*
Tulare	60x40	60x40	Brick	10	512; 2,048.	1 to 4.	8	Iron			Lattice overhead and wicket doors.
Mariposa	60x80	25x40	Granite and wood	4	441	2 to 3.		Granite			Air shafts.
Contra Costa	60x40	42x40	Brick	12	420	1	6	Iron			Grated doors and top of the cells.
Yolo	34x57	34x57	Brick	16		1 to 2.		Iron and	wood		Grated roof.
Lassen	30x43	30x40	Stone	2	312	1		Iron			Iron grating.
Plumas	24x40	24x28	Brick	6	512		1	Iron			Grated window-opening and alley ways.
Humboldt	240x150	14x40	Wood	5	512	1	3	Iron and	wood		Iron grating in ceiling and windows.
San Mateo	600x300	60x30 and L	Brick	10	336	1	8	Iron and	wood		By ventilating pipe and through walls.
Amador	54x36	36x54	Iron and stone	13	$332\frac{8}{10}$	1	8	Stone and	iron		Grated doors and windows.

4. What is the number of cells; and what the dimensions—length, width, and height—of each cell?
5. How many prisoners are confined in each cell?
6. What is the average number of prisoners confined?
7. What method of ventilation adopted for the cells?
8. Of what materials are the cells constructed?
9. How is the jail heated?
10. What is the character and quantity of water supplied to the jail? If supplied from a well, what is the depth of the well, and what is the distance from the cesspools or privies, if there are any?
11. What is the character of the soil and the depth of the bedrock where the well is located?
12. What method of drainage has been provided?
13. How are excrementitious substances disposed of? Where discharged?
14. What arrangements have been made for the disposal of excrementitious matters at night?
15. To what extent, if any, has disease originated among the inmates, and what forms of disease have prevailed?
16. Number of deaths among prisoners during year ending October 1, 1881?
17. How do the prisoners mostly employ their time?

------ ------,
Sheriff of ------ County.

The above questions seemed to cover all important points, and are simple and easy of being answered.

Replies have been received from the Sheriffs of thirty-one counties, and so far as they relate to the hygiene of the institutions, may be tabulated as follows: (See Table.)

Of the thirty-one counties heard from, thirteen jails are reported as being built of brick; three of brick and stone; two of stone; five of brick and iron; one of stone, brick, and iron; three of wood, one of these being of hewed timber; one of brick and wood; one of wood and stone; and one of wood, iron, and stone.

CUBIC AIR SPACE.

Supposing all the cells to contain the full number of prisoners for which they are designed under emergencies, we find, in the thirty-one jails reported, 106 cells containing less than 200 cubic feet each, and 267 containing over 200 cubic feet to each prisoner. Those giving over 400 cubic feet, number 61; those 500 cubic feet, 45; those 100 cubic feet, or less, 3. In addition to these, there are some in which the relation between the cubic air space and the number of occupants is not stated.

The above figures apply, however, only to emergencies—to occasions when the jails are full, and when some degree of crowding becomes necessary. Probably such occasions seldom or never occur, except in San Francisco. This opinion is strengthened by the statement made that at the present time the full capacity of none of the jails is reached. In three, with 22 cells, there were, at the date of the reports, no prisoners; in seven, with 84 cells, there were only one half, or less than one half, of the lowest number commonly assigned to a cell. If, as is doubtless the case outside of the larger cities, only one prisoner is confined in each cell occupied, we find only 97 cells in 373, in seven localities, in which the cubic air space is less than 300 feet per head. In the very large majority it is over 400, ranging from that to above 1,000. If, as stated by Doctor Parkes and other authorities, not less than 400 cubic feet should be allowed for each prisoner in jails, and 40 square feet of floor space, at least some of our jails are deficient, accepting the highest estimate according to the reports.

These are in San Francisco, Yuba, Santa Barbara, Stanislaus, Santa Clara, Solano, and Placer Counties. A strenuous effort is continually being made, and rightly so, by the authorities of San Francisco, to compel obedience by the Chinese population to the cubic air ordinance, and yet, under their own supervision, we find a prison house with 54 cells containing only 200 cubic feet per head, when the full number are confined, and 16 cells, under similar circumstances, with only 167 cubic feet; or less than 300 cubic feet in 31 cells with only one inmate.

Taking the smallest cells in each locality, and estimating only one prisoner to each cell, we find only two localities in which the floor space allowed is less than 40 square feet; the case is far different, however, when two or more are confined therein; then, for the smaller cells, there would be less than 40 square feet in all the jails except Sacramento, Alameda, San Bernardino, and Shasta. But while the cubic air space in many of the cells is less than it theoretically ought to be, it is probable that the deficiency is generally compensated by ventilation. In a number of cases where the air space is deficient, the arrangement of the cells is such as to afford ample ventilation. The cells are commonly inclosed within the walls of the jail building, and open by cross-barred or wicketed doors into large and ventilated corridors; many of them are ventilated besides, through the roof, or sides, or by air-shafts, the effect of which must be to supply sufficient fresh air to prevent a greater accumulation of carbonic acid than is consistent with the laws of health. It must rarely happen, outside of San Francisco, that the cells are fully occupied, or that they are occupied by the same prisoners for many days in succession. Except in rare instances the prisoners are not confined during the daytime. Taking the whole number of prisoners now in the jails, full statistics of which have been furnished, it is ascertained that in 373 cells, large and small, there is only a fraction over one to each cell.

These inferences, deduced from the reports, seem to be confirmed by the statistics of mortality. Only three deaths are reported during the previous twelve months—two by suicide and one by alcoholism. Very little disease of any kind is reported. At the San Francisco prison, 47 cases of smallpox occurred, a few originating in the building. In Sacramento, Yuba and Solano, malarial fevers are mentioned, of mild form. In the latter, they are thought to be due to the absence of any drainage, to overflowing cesspools and the foul and "suffocating" odors arising therefrom. It is stated that, according to the County Physician, more medicine is given to the inmates of the jail than to the patients in the hospital. Yet, it is added in the report of the Sheriff, that "the Supervisors have refused to adopt any system of drainage, the consequence being that some of the prisoners are sick nearly all the time." The *post hoc* argument in this case seems to be legitimate. It is the only instance out of 31 jails in which a similar condition, with like results, has been reported. As a matter of economy, leaving out the plea of humanity, it would seem to be in the interest of the county to remedy the evil. Something similar, as we shall see hereafter, though less revolting and less pernicious in its effects, exists in Yuba, perhaps an almost unavoidable result of the filling up of the river-beds and the sewers by debris from the mines.

WATER SUPPLY.

An abundant water supply is reported from all the jails. Fourteen use the town or city water, which is said to be good; in one, San Luis Obispo, it is described as "hard;" five are supplied by mountain streams or springs; three obtain water from artesian wells; nine from wells varying from 14 feet to 200 feet deep; three are over 100 feet, one, 45 feet, and five 25 feet or under. Of the wells, only two—shallow wells—seem to be in very dangerous proximity to privies or cesspools, one being but sixteen feet, and the other thirty feet. The remainder vary from 120 to 300 feet distant. As a whole, the water supply must be considered good and abundant.

DRAINAGE.

The information on hand, upon this subject, is in answer to questions 12, 13 and 14. These answers are given in full in the following tabular statement:

TABULAR STATEMENT CONCERNING DRAINAGE OF JAILS.

COUNTIES.	Questions.	Answers.
Sacramento	No. 12	Sewers and cesspools.
Sacramento	No. 13	Emptied into sewer, and conveyed to cesspool.
Sacramento	No. 14	Tin vessels are furnished with tight covers for iron cells. They are changed and washed every morning.
Placer	No. 12	A deep hole dug 50 feet from jail, and iron pipes running from jail to hole.
Placer	No. 13	Flushed out with water.
Placer	No. 14	None.
Yuba	No. 12	None whatever.
Yuba	No. 13	They are supposed to be buried in a vault, but, during the Winter, the vault overflows the yard from one to four inches deep, standing that way six months in the year.
Yuba	No. 14	None whatever, except to keep a bucket in each cell.
Tehama	No. 12	Drained to a cesspool in Court-yard, 175 feet from building.
Tehama	No. 13	Through sewer to cesspool.
Tehama	No. 14	Iron buckets in cells; good covers.
Alameda	No. 12	Oakland City system of sewerage.
Alameda	No. 13	Through the sewers.
Alameda	No. 14	By water-closets in every cell.
San Francisco	No. 12	Two main sewers, with branches connected with every cell.
San Francisco	No. 13	Patent water-closets in each cell connect with main sewers.
San Francisco	No. 14	Same as day.
Mendocino	No. 12	Brick sewer from jail to a creek about 300 yards from the jail.
Mendocino	No. 13	By the sewer described in last question.
Mendocino	No. 14	For cells, there are none. There is a water-closet in the jail court.
San Luis Obispo	No. 12	Sewer.
San Luis Obispo	No. 13	In San Luis Obispo Creek.
San Luis Obispo	No. 14	Cell buckets.
Santa Barbara	No. 12	Wood sewers to an old well 20 feet deep.
Santa Barbara	No. 13	Discharged in earth-closets, and then carted away and thrown into a covered hole.
Santa Barbara	No. 14	Earth-closets.
Ventura	No. 12	
Ventura	No. 13	A privy is situated in the main room, from which a sewer leads to the oceanside.
Ventura	No. 14	Buckets are given each prisoner.
Fresno	No. 12	From building to cesspool through pipes.
Fresno	No. 13	Water-closet to cesspool through pipes.
Fresno	No. 14	Pots in cells.
Plumas	No. 12	Iron sewer.
Plumas	No. 13	Through sewer, below town, 1,000 feet from jail.

TABULAR STATEMENT CONCERNING DRAINAGE OF JAILS—Continued.

COUNTIES.	Questions.	Answers.
Plumas	No. 14	Privy in each cell, that empties into 6-inch pipe, and thence into main pipe, and each privy piped out with 115 feet pressure every week when occupied.
Santa Clara	No. 12	Sewerage.
Santa Clara	No. 13	*Stationary water-closet in each cell, connected with sewer.*
Santa Clara	No. 14	Answered in No. 13.
Solano	No. 12	None whatever. Board of Supervisors having refused to adopt any system of drainage, in consequence of which, there are some of the prisoners sick nearly all the time.
Solano	No. 13	Into cesspools, which sometimes overflow, and at times become almost suffocating from the smell arising therefrom.
Solano	No. 14	None, except through the water-closets which each cell is provided with.
San Diego	No. 12	Pipes leading into vault outside of jail and inclosure; sides, bottom, and top of vault cemented.
San Diego	No. 13	The vault is cleaned by hand when necessary, and the substances hauled away and dumped into the bay.
San Diego	No. 14	A privy in each cell, with pipes leading into the cemented vault.
San Bernardino	No. 12	Sewers all through the jail.
San Bernardino	No. 13	Through pipes, in a place prepared for the purpose.
San Bernardino	No. 14	Buckets.
Los Angeles	No. 12	By sewerage.
Los Angeles	No. 13	By running into sewer.
Los Angeles	No. 14	Passing into sewers with buckets from cells.
Siskiyou	No. 12	None.
Siskiyou	No. 13	Outside of wall, in vacant lot.
Siskiyou	No. 14	None.
Shasta	No. 12	The situation of the premises is such that no drainage is required.
Shasta	No. 13	Each prisoner disposes of his own every morning, by means of buckets, in a place prepared for the purpose at lower end of jail yard, 100 feet from jail.
Shasta	No. 14	No occasion for night work.
San Joaquin	No. 12	Pipes from jail building to carry off rainwater. Drain in jail yard six inches square.
San Joaquin	No. 13	Taken out in morning and deposited in drain. Force of water in hose carries it to cesspool thirty feet outside jail premises.
San Joaquin	No. 14	None.
Alpine	No. 12	
Alpine	No. 13	Discharged into a sewer, with continuous stream of water running through it.
Alpine	No. 14	Prisoners usually at liberty to go to privy vault, at night, which is in the jail, except bad cases, who are provided with chamber.
Stanislaus	No. 12	Vitrified pipes, leading to a large under-ground cesspool fifty feet outside of jail walls.
Stanislaus	No. 13	As No. 12.
Stanislaus	No. 14	With large slop pails *in the cells.*
Mono	No. 12	None.
Mono	No. 13	In privy vaults.
Mono	No. 14	Buckets.
Tulare	No. 12	Sewerage.
Tulare	No. 13	In the sewers.
Tulare	No. 14	In buckets.
Mariposa	No. 12	None; as none is required, the jail being situated on a high point, or bluff, that requires no drainage.
Mariposa	No. 13	In privy, in jail yard, with excavation twenty feet deep.
Mariposa	No. 14	Buckets emptied into privy once or twice daily.
Contra Costa	No. 12	Sewers of six-inch clay pipe, cemented joints.
Contra Costa	No. 13	Through sewer into the bay.
Contra Costa	No. 14	Slop buckets at night, which, in the morning, are emptied through a sink into the sewer, which is then flushed.
Yolo		
Yolo	No. 12	None.
Yolo	No. 13	Buckets in cells emptied daily into water-closet in jail yard.
Yolo	No. 14	Buckets.
Lassen	No. 12	
Lassen	No. 13	Carried from jail sixty yards.
Lassen	No. 14	
Humboldt	No. 12	Natural.

TABULAR STATEMENT CONCERNING DRAINAGE OF JAILS—Continued.

COUNTIES.	Questions.	Answers.
Humboldt	No. 13	Water-closets in each jail. Through pipes, into Humboldt Bay.
Humboldt	No. 14	Same as day.
San Mateo	No. 12	Pipe running to a cesspool.
San Mateo	No. 13	Into cesspool.
San Mateo	No. 14	Slop bucket.
Amador	No. 12	Iron pipe leading from privy in jail to creek, 400 feet long, on a steep grade to the creek.
Amador	No. 13	Through pipe to creek.
Amador	No. 14	Covered chambers in cells, and emptied through pipes every morning.

The above tabular statement shows that of the thirty-one jails reported, seventeen drain and dispose of their excrementitious substances by means of special sewers, emptying into cesspools or privy vaults, one of these being provided with water-closets; three avail themselves of the city sewers; one uses the earth closet; six drain their sewage into the ocean, bay, or creeks; while four make no provision whatever. For the disposal of excrementitious substances at night, sixteen use buckets or other vessels for each cell; five have a water-closet in each cell, or in the jail yard, connected with a "drain to" a cesspool, or with the city sewers, or emptying directly into a watercourse; one adopts the earth-closet system for day and night; two have a privy in the cells; and, so far as stated in the reports, five have made no provision.

It will be seen that for the disposal of night sewage, more than half use covered buckets, which are emptied and cleaned each morning. This is probably a safer plan than having a water-closet in each cell connected with cesspools or sewers, unless, indeed, more care is taken to provide secure traps and proper ventilation, by connecting air shafts, than is often done in even the best houses of our crowded cities. A water-closet opening into a bedroom is a dangerous instrument at the best, and is no more suitable for the prisoner in jail than for the occupants of our most elegantly appointed hotels or private dwellings. Better than either, for the purpose required, is the earth-closet system. It is safe, clean, odorless, and can be emptied and cleaned each morning by the prisoner himself. How inconceivably better would this system be in Yuba and Solano Counties than that now in use there, in the former of which the sewage is emptied into "a vault which overflows the yard from one to four inches deep" for six months in the year; and in the latter, it is discharged from the cells into overflowing cesspools, "the smell arising therefrom being almost suffocating." Is it surprising that, with this condition of the cesspools, and with water-closets discharging therein, "some of the prisoners are sick nearly all the time?"

OCCUPATION OF PRISONERS.

The replies of the Sheriffs to the last question in the list are suggestive:

Sacramento County—Those serving sentence work on the streets, cook, and keep the jail clean.
Placer County—Walking, reading, playing cards.
Yuba County—Doing nothing only swapping lies and concocting plans to get out.

Tehama County—Those serving a term are worked in and about the Court House yard and jail; those awaiting trial are idle, as we have no authority to work them.

Alameda County—Those under sentence are worked about the jail and Court House grounds, cleaning, repairing, painting, etc., and spend a great deal of time reading.

San Francisco County—Sleeping, reading, telling stories, and putting up jobs to rob safes when they get out—excepting twenty-one trusties, who do the work of the jail.

Mendocino County—Playing checkers, cards, and reading.

San Luis Obispo County—Swing and walk in corridor and play cards.

Santa Barbara County—Loafing within the jail.

Ventura County—In idleness; some read, and papers and books are found for them; those in for petty offenses are worked about the jail.

Fresno County—If for misdemeanors, at public labor on county ground.

Plumas County—Reading and cursing their luck.

Santa Clara County—Six work on pump, two inside and two outside trusties, and two cooks; the rest have nothing to do.

Solano County—Working the grounds around county buildings.

San Diego County—By working on streets and public grounds.

San Bernardino County—Reading, smoking, etc.

Los Angeles County—Working on public streets and playing cards.

Siskiyou County—Sawing wood for use in jail, cooking their food, and reading, etc.

Shasta County—By reading, smoking, writing, etc., some that are serving out a term sentence are required to work on the public roads.

San Joaquin County—No provision has been made for work and they are idle.

Alpine County—Reading and playing cards; those under sentence are employed cutting wood, grading, etc.

Stanislaus County—Those under sentence for misdemeanors worked in chain-gang; those for felony are allowed the use of the corridors, which are very large, for exercise, from eight o'clock A. M. to five o'clock P. M.

Mono County—Playing cards, also chopping wood for county purposes.

Tulare County—Those confined in cells, reading; those for petty offenses work in chain-gang.

Mariposa County—Eating, drinking, and sleeping.

Contra Costa County—Reading or walking in the corridor.

Yolo County—Felonies, no employment; misdemeanors, worked in chain-gang.

Lassen County—Question not answered.

Humboldt County—Doing nothing.

San Mateo County—Prisoners are idle, except what work is done to keep jail clean and grounds in order.

Amador County—Walking around the jail, reading, etc.

Of the thirty jails from which answers have been received to question No. 17, seven are reported as having established chain-gangs in which prisoners are employed in work upon the public streets or grounds, and seven as supplying other work, such as cooking, cleaning, sawing wood, etc.; in some instances work in the chain-gang is combined with other work, so that all classes are provided with something to do.

In thirteen the prisoners are said to spend most of their time in idleness, or in playing cards or checkers, though, in many cases, a portion of their time is passed in reading and walking. Thus, nine mention "reading" as one of the occupations provided.

Among the objects of punishment may be mentioned here, the prevention of crime, the holding up before the criminal the certainty of its infliction, and, if possible, his reformation. Mere restraint within the prison walls, with the disgrace, the loss of liberty, attendant upon it, is to many a real punishment. To others it is by no means so. The officers of the police will doubtless testify that not a few individuals, callous to shame, shiftless, lazy, indolent, vicious by disposition and habit, and without means of support, are no sooner discharged from imprisonment than they will commit some offense for the sole purpose of being returned. The wholesome food, the comfortable quarters, the easy, idle life of the jail, are more suited to their tastes than gaining an honest living by work. Hence, our jails, in the cities especially, are often occupied continuously by the same individuals serving repeated sentences for slight offenses. For these something more than restraint is needed; and how these habitues of the jails will, one by one, drop off and seek other localities whenever it becomes known that a chain-gang is to be established is a matter of common observation in police quarters. Their sensibilities are touched at once.

But, besides being an effective punishment, the chain-gang is a reforming agent. It affords occupation for body and mind. It breaks in upon the system of idleness common in our jails, and enforces industry. The physical system is improved by healthful exercise, while the mind is furnished with something whereupon it may profitably reflect. It doubtless deters many from the commission of crime, and thus affords a greater protection to society, while diminishing the number of vagrants, thieves and burglars, who find their favorite place of resort in the cities. The spectre of the chain-gang often becomes an effective quarantine. Like ordinary confinement without labor, it compels temperance, a thing to which a large majority of this class of criminals have been long unused; but, better than this, it teaches them the useful lesson, which probably few of them would willingly admit, that a man may have a good appetite and do a good day's work without the stimulus of a morning "cocktail."

Under all circumstances compulsory labor, whether in the chain-gang, or within the jail inclosure, on public works, or, as in some of the counties, in "chopping wood," would seem to be an act of humanity to the prisoner, profitable to him and economical to the State.

The habit of reading should be encouraged in all jails where the prisoners are not compelled to labor, and it would be a work of philanthropy if citizens having books to spare would furnish them for use there. It is not at all surprising if prisoners, having no work to perform, and no books to read, should generally pass their time "in putting up jobs to rob safes when they get out."

The above remarks are made rather by way of comment than of criticism. In reviewing the jails of the State, so far as their condition can be determined by the reports of the Sheriffs, it is but just to say that they appear to be generally well regulated and humanely conducted.

REGISTRATION OF DEATHS, BIRTHS AND MARRIAGES, AND OF DISEASES.

It becomes my duty again to call attention to the insufficiency of the registry law. This subject was urged in the last report of the State Board of Health, and presented to the Legislature in the form of an amended Act, one of the features of which was to provide a small compensation for those upon whom the duty of making reports was imposed. The present law provides such compensation for those of the County Recorders whose salaries are made up by *fees;* others, having salaries fixed by law, could not legally receive and retain fees for any purpose. The proposition authorizing each county to pay its Recorder for this extra duty imposed upon him was declared by the Judiciary Committee of the Senate to be illegal. This decision was rendered at so late a period of the session that no opportunity was afforded to prepare and procure the passage of another bill.

The difficulty of obtaining a reliable registration of deaths, births and marriages is not peculiar to California. The subject has perplexed other and older States, and has been made the topic of earnest discussions in sanitary conventions. The chief complaint has been that of the impossibility of generally procuring the desired returns from physicians and others whose duty it is to communicate the facts to the county officers. Could this be accomplished, there is little doubt that the work assigned to the County Recorders would be, in most cases, faithfully discharged. In only one instance has the circular addressed to them upon the subject been answered by a virtual refusal to comply.

After mature reflection, I am convinced that the division of the subject, as suggested in the last report of the State Board of Health, so as to require statistics of births to be collected by the School Census Marshal, is well adapted to the situation in California. These officers are appointed annually for every school district in the State; they are compelled to report, under oath, to the County Superintendents of Schools, and through them to the Superintendent of Public Instruction. It would be but a slight additional tax upon their time to impose upon them the extra duty of ascertaining and classifying the births within their districts. It is well known that one of the difficulties in obtaining a full registration of births arises from the fact that many of the cases are unattended by a physician, or even by a professional midwife. This is forcibly true of many of the country districts remote from towns. Such cases only the Census Marshal would be likely to reach.

By the voluntary action of the present very obliging Superintendent of Public Instruction, Mr. F. M. Campbell, an experiment was made in 1881, but for reasons explained by that gentleman, it was only partially successful. In his opinion, the plan can be made effectual, and I have the assurance of his hearty co-operation.

The registry of marriages can doubtless be correctly obtained from the County Recorder, as provided for by the present law.

There remains, therefore, if the plan proposed for the census of births be adopted, only the registry of deaths, for which some more effectual means is to be sought.

The difficulties attending all efforts to obtain vital statistics in the United States for registration have already been attended to. The bulletin of the National Board of Health for February, 1882, contains a report upon this subject by Surgeon J. S. Billings, Chairman of the Committee on Vital Statistics, of that Board, in which after an analysis of the various registration laws, and a comparison of the results obtained under them, he concludes that a majority of them have failed to produce any useful statistical results. "Of the twenty-three States," he says, "which have had registration laws, only eight have published statistics which can be said to have any scientific value, and none of them have published results as complete as those attained under the English registration Acts. It will seem, also, that the supposed, and probably in most cases the real, cause of failure of these registration Acts in this country, has been the want of sufficient compensation to the registering officers, and that the successive amendments to the registration Acts which have been made in the States which have secured the best results, have consisted essentially in increasing the pay of the registrars. One of the first things, therefore, to be considered in devising any scheme for registration of vital statistics, is the cost; and if the attempt be made, as it usually is, to reduce this cost to the minimum, it is pretty certain that the results will be reduced in the same proportion."

In Massachusetts, it is learned that the cost of recording a death will average about thirty cents. Yet Massachusetts, by reason of the diversity of its population, is favorably situated for the work of registration. Thirty cents per capita in California, supposing the deaths to number ten thousand, which is believed to be a liberal estimate, would require an expenditure of $3,000. This would be mainly borne by the large cities, unless, as in Massachusetts, the expense is shared equally by the State. San Francisco would pay, taking the mortality of 1881 as a basis, $1,246 50; Sacramento, $105 50; Oakland, $114 30; Los Angeles, $80 10; while to small towns and country districts, where the number of deaths is small, the tax would be insignificant. Antioch, for example, would pay $4 20, Merced $8 40, and Nevada City $11 70. Will it pay? This is the practical question which at once occurs.

Just as the prudent merchant from time to time adjusts his balances, takes "an account of stock," and reckons his gains and losses, so should the State make annual provisions for a proper estimation of its own condition, its social status, its gains by births and its losses by deaths, its productive resources, and the causes which tend to impair its vigor and retard its growth in population. Correct information on these subjects is worth paying for. They embrace matters of interest to every citizen. They have a real practical value.

Perhaps, until we are advanced more toward perfection in the registration of *deaths*, it will be too much to expect anything like a satisfactory registration of *diseases*. Yet, they are both important. They both stand at the very head of efficient sanitary work. Indeed, disease registration, so far as individual communities are concerned, possesses the greater importance. Its object is to give information which may be of immediate and vital interest; to sound the note of warning when danger threatens; to afford time for preparation against a common foe.

It is a fact, of daily observation, that too little attention is paid to the first cases of contagious disease occurring in a town. They are often concealed, from the notion that publicity may excite needless alarm; may divert intercourse and injure trade. Hence no steps are taken to secure isolation, and a disease which might have been confined to an individual, gradually extends and assumes the fearful proportions of an epidemic. There is a strange remissness on this subject, as to all the contagious diseases, and none more than in regard of diphtheria. Admitted by the best authorities to be a contagious disease, recognized everywhere as being one of the most fatal diseases of childhood—"a disease," says Dr. Baker, of the State Board of Health of Michigan, "which in one year (1869) caused in England over 1,000 deaths; in another year (1872), over 1,000 in New York City; for each of the two successive years (1876–77), in Massachusetts, over 2,000 deaths"—a disease which, he might have added, was the cause of 1,390 deaths in New York City in 1880, and 2,247 in 1881, and 8,629 in fifty localities reporting to the National Board of Health, and which, during the same year in our own State, brought desolation and anguish to many homes—it is one of the strange things in human action that measures of precaution should not be taken to prevent its spread upon its first appearance in a place. Efforts in this direction, especially in determining the special causes existing, might often be aided by the Board of Health.

Disease visits us by many avenues. It is not alone contagious disease, due to a specific germ, and of which the recognition at once suggests the means of prevention, that should be the subject of registration. An epidemic, even more deadly than any of these, may arise, the first cause of which may be obscure. It may have its origin in purely local conditions—in the atmosphere of dwellings polluted through imperfect sewerage, through defective plumbing, or possibly in the water with which the inhabitants are supplied. These are matters which not every one, even the most skillful in medicine, is able to detect. Their recognition often calls for special examination and investigation. Yet so subtle are they sometimes, so obscure, that the most experienced in sanitary methods may be baffled.

It is to aid in such emergencies, to give advice, to direct investigation into the causes of disease, and if possible, suggest a remedy, that has been made one of the most responsible duties of the State Board of Health. How can it discharge this duty unless informed by timely and authentic reports of the presence of disease?

Boards of Health should never be stationary. With the rapid advances in sanitary science and in our knowledge of preventive measures, they should be progressive. The experience of those engaged in the work is continually ripening, new facts are being evolved, new methods of advancing the important interests to which they are devoted, and which have been the prime objects of their organization. What was expected of the Board of Health in 1870 is far short of what is now demanded of it, if it would faithfully and efficiently discharge its duties. Then, State Boards of Health were regarded by many as an experiment. Massachusetts led the way, and California soon followed. Since then other States have enlisted in the work; everywhere an interest has been aroused, and busy minds are engaged in searching out a solution of the oftentimes difficult problem which the work of sanitation presents, and in elaborating new and more effective measures for the fulfillment of their high mission.

Among the measures to which the judgment of sanitarians have assigned the first place in importance, as already stated, is an efficient system of registration of births, deaths, and marriages. By the side of this, equal to it in practical utility, is the registration of diseases. To no subjects affecting the interests of the whole State, can the legislature more profitably devote a portion of its time.

It is needless to repeat here the arguments advanced in behalf of the first of these in previous reports of the Board. It will suffice to enumerate a few of the more prominent. It throws important light upon many interesting questions of vital statistics, such as longevity, the influence of city and country life, of trades and professions over the natural increase of population, as well as over disease and mortality. It determines the relative healthfulness of localities, and their influence upon the development of certain diseases. It intimately affects the distribution of property. It aids in the detection of crime.

Upon an equal basis of universal authority rests the other division of the subject just spoken of—the registration of diseases. Were such a law enforced we would be able to talk intelligently about the influence of our climate over the production of disease, the effect of seasons, of pursuits in life, and of localities.

Perhaps the period is not auspicious for the passage and due observance of a general law covering the whole State, on this subject. It is probable that the information sought for can, for the present, be obtained from the far greater portion of the State through the health officer, if there be one, or the clerk of the local Board of Health, whose duty it should be made to obtain from the physicians of his town reports of the diseases occurring, and to make reports thereof to the State Board of Health. This would require an

AMENDMENT OF THE ACT ESTABLISHING LOCAL BOARDS OF HEALTH,

and amendments thereto, are much needed, not only for this purpose, but to compel their formation and active maintenance by all incorporated cities and towns.

Nominally this is now the law. The second section of Act of March, 1878, defines the duty of the local Boards to "report to the Secretary of the State Board of Health, at Sacramento, at such times as the State Board of Health may require:

"*a.* The sanitary condition of their locality.

"*b.* The number of deaths, with the cause of each, as near as can be ascertained within their jurisdiction, during the preceding month.

"*c.* The presence of epidemic, or other dangerous, contagious, or infectious disease," etc.

This is the law, but of the incorporated cities and towns only a few have obeyed it to the extent of establishing a local Board, and fewer still of maintaining an active working organization. Several causes have occurred to occasion this result, among others, which have been mentioned to me, the unworthy one of local jealousies.

The law seems, moreover, to conflict with the chartered privileges of some of the cities, wherein it is made the right of the corporate authorities to appoint a Board of Health and prescribe rules for their government. Under this conflict of laws, the result has sometimes been—*no Board at all.*

It should be the duty of the local Board to adopt rules and regulations for *burials.* No burial should be permitted without authority from the Board of Health, or Health Officer, and the presentation of a certificate from the physician in attendance, if there has been one, as to the cause of death, or from the Coroner—said certificate to be recorded in the office of the Board, or of its clerk. In this way only can the facts be accurately ascertained. This, substantially, is the course pursued in San Francisco, Oakland, Sacramento, Los Angeles, and San José, the result being that the records of deaths in these cities are as perfect as such records can be.

Some months ago I addressed a communication to the correspondents of the State Board of Health, or other physicians, in several principal incorporated towns asking information as to the existence of any rule regulating burials. Answers were received from nine towns. Of these, five required no burial permits whatever, the only record of deaths and their causes being kept by undertakers, responsible to no one, or by Coroners when an inquest has been held. Not even has a physician's certificate been considered essential. So far as information has reached the State Board, San Francisco, Sacramento, Oakland, Los Angeles, Stockton, Vallejo and San José are the only cities in the State where any local ordinance on the subject has been passed or is observed. There may possibly be one or two more, but, if so, they have failed to convey the information of the fact in answer to the circular addressed to them. In one of the above enumerated cities, the law is not strictly observed. One correspondent writes: "We have two undertakers, one of whom never inters without a permit; the other rarely applies for one. * * * We have no City Attorney to prosecute those who fail to comply with the ordinance." The doctor thinks, however, that his reports cover all the deaths occurring there.

The Act creating Boards of Health should be further so amended as to require all Boards organized under it, and, if possible, all Boards of Health created under city charters, to adopt an order enforcing the obtaining of burial permits as suggested above. The certificates for the purpose should state the name, age, sex, condition, whether married or single, nativity, and the date and cause of death.

With such a system enforced in every town or city we might have the satisfaction of obtaining an authentic record of deaths for at least the greater part of the State and covering a large majority of the population—a valuable aid in determining the influence of our climate over disease, which would go far towards supplementing any deficiencies in the general registration law.

Both the law for the registration of births, deaths, and marriages, and that establishing local Boards of Health, therefore, require amendment; and it is respectfully suggested that a committee be appointed to consider these subjects and to report amended Acts to the next meeting of this Board.

Among other amendments to the registration law, I am convinced that its compulsory features should be made more stringent, that the Secretary of the State Board of Health should be specifically authorized to furnish, on application, small bound registers of deaths, instead of the loose blanks heretofore sought to be distributed through the County Recorders, to each physician, and that a reasonable amount should be paid from the county treasury to the registering officers for each report of death furnished, if indeed any method can be discovered, not conflicting with law, by which this can be provided for.

It is not out of place here to repeat the conclusion, already quoted, of Dr. J. S. Billings, that "*if the attempt be made, as it usually is, to reduce this cost to the minimum, it is pretty certain that the results attained will be reduced in the same proportion.*"

Respectfully submitted,

F. W. HATCH, M. D.
Permanent Secretary State Board of Health.

SACRAMENTO, CAL., October, 1882.

SUPPLEMENT TO THE REPORT OF THE SECRETARY.

SMALLPOX OF 1880 AND 1881.

The protection of a community from contagious disease consists in either mitigating its destructiveness where it has been introduced, or in preventing invasion. For the former purpose, the various hygienic measures, applicable to the whole class of contagious or infectious diseases, or to each one distinctively, are, under ordinary circumstances, more or less successfully invoked. Some of these, cleanliness, disinfection, the improvement of the local conditions, isolation of the sick, are, or ought to be, universally observed as applicable to them all, and capable, commonly, of averting widespread disaster.

But as the source of contagion or infection in the different members of the class varies, as well as the difficulty of preventing its introduction and diffusion, so must the means to be employed. In cholera, for example, the seat of infection is believed to be in the decomposing discharges from the alimentary canal of the sick; in yellow fever a certain decomposition of animal and vegetable matter, associated with a high atmospheric temperature; in smallpox, in emanations from the bodies of the sick, by contact with them or with infected articles of clothing and the like. Hence, the difficulty of limiting its development or extension when it has once established itself.

To the two former, the sanitary measures above mentioned are especially applicable, while in the latter we have, besides these, another essential and effective sanitary resource tested and confirmed by the experience of more than half a century—an inestimable measure, handed down to us by the immortal Jenner, beautiful in its simplicity, certain in its efficacy, and marvelous in its protective power. There can be little doubt—the fact has been demonstrated by the severest tests—that by vaccination, properly performed, rigidly enforced upon every individual in the land, smallpox would be effectually robbed of its terrors. There is almost as little doubt that, by the prompt and perfect isolation of the disease when introduced into a city or town, we have it in our power so to circumscribe it as to render its diffusion impossible. But in the present state of public opinion, it has generally been found impossible to carry out either of these measures, in an absolute manner—to prevent exposure to contagion before the presence of the disease is ascertained, on the one hand, and to conquer prejudice on the other.

Similar difficulties have arisen in applying the sanitary measures necessary to prevent the spread of the other diseases mentioned above. Hence, the quarantine system has been appealed to—a system of non-intercourse with infected localities. This has commonly been applied to seaports and vessels arriving by sea; and its restrictions have generally been directed against those diseases mentioned above—to which typhus, or ship fever, has sometimes been added.

Many serious objections have been urged against the quarantine system. It was originally intended to continue forty days, and its operation was attended by many hardships, or even barbarity. Now-a-days its duration depends mainly upon the duration of the incubative stage of the disease quarantined against, and its exactions are enforced in a more humane and reasonable manner. It seriously interferes with the business relations of nations and peoples, it restricts commerce, it trammels the liberty of the individual, and it is liable to great abuses. Yet, as a measure designed for the public safety, it has been acquiesced in.

Inland quarantine has been often spoken of, but seldom adopted. Like that against ships by sea, it has been pronounced burdensome upon the business interests of communities, and repugnant to the civilization of the age. It was regarded as a bold step—a quasi-usurpation of State rights—when an inland quarantine was established within a recent time against the propagation of yellow fever. Yet history tells us of the great good accomplished. "Quarantines (inland) established with such a degree of surveillance and vigor that absolute non-intercourse is the result, have effectually and without exception, protected those quarantined from attacks of yellow fever," says the report of the U. S. Commission in 1878.

I am not aware that a perfect and rigorous inland quarantine has ever been invoked against smallpox. Generally, it would be unnecessary, if not unjustifiable. As already stated, we have in isolation and vaccination a full protection against the disease, if only they could be enforced. Unfortunately they are not. The former may perhaps be compelled when a case of smallpox has entered a town, if early discovered, by an active and resolute health board, but the latter, so long as it is not compulsory, will not be universally adopted. False fears prevent it; ignorant prejudices oppose it; reckless carelessness favors its neglect. Yet no fact in medicine or in hygiene is more certain than that if vaccination were made compulsory, if every individual within the limits of a town or city were successfully subjected to its influence, smallpox could never spread there, and, if introduced, would die of inanition. It would starve to death.

During the past year or more smallpox has been unusually prevalent in the United States. It has raged with uncommon violence, following the lines of travel, and for a time seemed to defy the most earnest and vigorous efforts of the health authorities. It had for some time domiciled itself, as it seemed, in the metropolis of this State, making no rapid or alarming headway against the sanitary measures directed against it, but finding from time to time, among the unprotected, new material upon which to expend its force.

Smallpox in 1880.

The circular of the State Board of Health, for October, 1880, contained the following notice of this disease: "Smallpox, which made its appearance in San Francisco, Oakland, and Stockton, some months ago, but limited to isolated cases, or to special localities, seems to have received a new impulse, and to have become at least feebly epidemic in the former of those cities. Cases have also been recently reported by the press in Oakland, and one in San José; one death occurred during the present month (November) at the pest house near Sacramento, the patient having been brought from the mountains. The disease was contracted in San Francisco. While there is no present need of very great alarm, the lessons of the past teach us the importance of being prepared for its approach, and of meeting it by the only prophylactic known to medical science."

The circular for November reported one death by smallpox at Willows, in Colusa County, and mentioned the fact of a case of varioloid at St. Helena, in Napa County, and the rumored appearance of the disease at Jackson, Amador County. A letter asking for information as to the extent of the disease in the latter place, was unanswered.

The December circular contained the record of eleven deaths by smallpox—ten in San Francisco and one near St. Helena, and reported a few cases as having occurred in Florin, a farming neighborhood about ten miles from Sacramento. All of the above cases occurring in the interior of the State, except, perhaps, some of those in Stockton, were introduced from San Francisco.

The statistical table contains a record of fifty-one deaths during 1880. From June 30th of that year to December 31st, 325 cases were reported and verified at the Health Office in San Francisco, which added to five cases in the hospital June 30th, make 330 cases. Of this number forty-three are reported to have proved fatal.

From the report of Doctor Woolsey, late Health Officer of Oakland, we obtain an account of the early progress of smallpox in that city. Dating from the commencement of the disease there, we find one death recorded in July, 1880, a Chinaman; one in August, a Chinaman; one in September, a native of the United States; and one in December, an infant under six months of age, a native of Oakland. "Its first appearance," Dr. W. says, "in Oakland was made known July 27th, upon the discovery of a death from the disease at the jute mills, where 710 Chinamen and boys were congregated under one roof. This was a confluent case. The second case occurred at the jute mills August 6th, but was concealed until the ninth. This was a case of confluent smallpox, and proved fatal.

The next four cases occurred at the jute mills August 10th. One of the afflicted Chinamen had confluent smallpox; another, who had previously had smallpox, had the discrete form of the disease; and the two remaining Chinamen, both of whom had been vaccinated in youth, had the disease in a mild form, which modification was evidently due to vaccination performed after they had been exposed to the disease. All these four cases recovered.

The seventh case appeared at the Jute Mills August 10th. This was a mild case of varioloid, apparently made so by "vaccination after exposure to the disease." The other cases, to the extent of fourteen, occurred in the city, making twenty-one cases, with a total mortality of four. In the absence of a hospital, efficient measures of restriction were taken by a rigid quarantine.

Smallpox appears to have commenced in Stockton in August, 1880. From the 20th of that month to February 21, 1881, forty-six cases are kindly reported by Dr. Hudson, with eleven deaths. The disease is said to have developed in the paper mill, in the person of a young girl engaged there. One case occurred among the Chinese. This patient had previously had smallpox, but died in this the second attack. Some cases were imported from San Francisco. A majority of the deaths were among children.

Of the cases occurring in Florin, in Sacramento County, just mentioned, Dr. C. S. Bradford, the physician in attendance, has courteously furnished the following information. The disease originated with a young man who had recently returned to his home from San Francisco. He had confluent smallpox, and died on the seventeenth day. The young man stated that he had been vaccinated when a lad, but no evidence of the fact could be discovered upon his arms. From this case, eight additional cases followed among the members of two families, occupying the same house. Of the nine persons attacked, three died. The last death occurred in January, 1881.

Smallpox in 1881.

Passing to 1881, we find a total of seventy-five deaths reported in the table for that year.

Resuming the current history of the disease, we learn that 182 cases were reported and verified at the Health Office in San Francisco, from January 1 to June 30, 1881, viz: 32 in January, 22 in February, 35 in March, 62 in April, 20 in May, and 11 in June. Among these there were 49 deaths, making 92 deaths for the twelve months ending June 30, 1881, and 507 verified cases. Of the deaths, 75 were among the white population, 15 were Chinese, and 2 colored.

From July 1 to December 31, 1881, 119 cases were verified: July, 13; August, 23; September, 15; October, 18; November, 13, and December, 37. There were 21 deaths, viz: 3 in July, 8 in August, 4 in September, 3 in October, 2 in November, and 1 in December.

For the above information, I am under obligations to the efficient Secretary of the Health Office of San Francisco, Mr. Hoesch.

In Stockton, from February 1 to December 31, 1881, it is learned, through the kindness of Dr. Ruggles, that 21 cases occurred. Males, 11; females, 10. Under one year, 1; over one and under five years, 1; over five and under ten years, 8; over ten and under twenty years, 6; over twenty years, 5. Of the 21 cases, 11 were classified as variola and 10 as varioloid.

As to the origin of the disease, Dr. Ruggles reports: Unknown, 6; from junk, 3; exposure to a case in the country, 1; exposure in a house in which infected clothing had been hidden, and which had been discovered by some boys, 4 (this house was burned by order of the Health Officer); exposure to a case in the same family, 6. One case proved fatal, it being of the hemorrhagic type.

In July, the disease made its appearance in Sonoma County, there having been five cases and one death. I am under obligations to Dr. B. S. Young, the County Physician, for the following history:

Santa Rosa, September 9, 1882.

Dear Doctor: The first case occurred in the County Hospital July 9, 1881, and had been admitted three days before from Gurneville, in this county, supposed to be suffering from remittent fever. On the appearance of rash, he was moved to pest house. Left San Francisco fourteen days previous to admission; was not aware of exposure, though plenty of smallpox in the city. Recovered.

Second case occurred July 21, 1881, and was attributed to exposure in County Hospital, as he was an inmate at the time. Recovered.

Third case occurred July 26, 1881, also from County Hospital, and in the same ward with first one admitted. No other opportunity of contracting the disease. This one also recovered, and in a few months died with consumption.

Fourth case, an emigrant from the East, was also brought from Gurneville, this county, to County Hospital, August 15, 1881, well broken out; was cautious about exposure, and sent immediately to pest house; left San Francisco fourteen days before. This case appeared to be malignant from the start, and the long ride from Gurneville, twenty-five miles over a rough road, was too much for him, and he died in two or three days after arrival.

Fifth case, also an emigrant from the East, was apprehended on the street September 10, 1881; was in San Francisco twelve days previous. This was also confluent, and was sent to pest house. Recovered.

None of these cases had been vaccinated, except the two taken from the County Hospital, and that did not take, so that they were all genuine cases of smallpox. I would like to suggest here the propriety of having some central location in this State—say San Francisco or Sacramento—where we can procure undoubtedly pure matter. Nearly all the virus used here is from San Francisco; points, quills, and cones, have been almost worthless; and we have fallen back to the scab. I know that numbers of physicians would be glad that the State Board of Health would urge the Legislature to provide some such measure in case of epidemics.

The next account we have of the disease is from Hanford, in Tulare County. Two cases were reported, the first in the person of Mr. J. M. Fullar, a resident of the town. It proved fatal August 27, 1881. "On Tuesday, August 30," Doctor Muir writes, "his only son, aged six years, manifested the usual symptoms of the initial stage of smallpox. * * * It was of the discrete variety. The boy was vaccinated during his father's illness, but it did not succeed. * * * With regard to the origin of the disease, nothing positive is known. Fullar's wife visited Oakland about the eighteenth of July, and returned during the last week of the same month. She had a chill on the night of her return, followed by a mild fever. In two or three days she called my attention to four or five pimples upon her face, which resembled 'iodic acne.' I gave her no treatment. After smallpox developed in her husband, she told me that she had been vaccinated when a child, effectually, and that her husband had been vaccinated when a small boy unsuccessfully. I think it probable that Mrs. Fullar contracted varioloid while in Oakland, and that the origin of smallpox in Hanford may be attributed to that source."

On the seventh of October, smallpox appeared in Sacramento County, in a family twelve miles distant from Sacramento. It was in a family just arrived from Chicago by the Central Pacific railroad, in an emigrant car. This case proved fatal, and of four additional cases occurring in the house, one died. All who had been exposed to the disease before its character was discovered, were vaccinated, and non-intercourse established.

September 30, 1881, a man named Raabe died near Tremont, in Solano County, of a disease pronounced to be purpura haemorrhagica. He arrived from Holland, September twentieth, via Chicago. On the car a fellow-passenger from the latter city was taken sick with an eruptive disease, and was kindly nursed by Raabe until he had reached, it is said, some point in Nebraska, when he was put off the car. Raabe came on to Tremont and stopped with his son's family, and was visited by many of the neighbors, the true nature of the disease not having been suspected. He was said to have been vaccinated in youth, but of this there is no certain evidence. D. Raabe, the son, showed an eruption of varioloid about October eighteenth. He had been vaccinated when a boy. The attack was so mild as not to confine him to bed, and when the writer visited the next case to be mentioned, he found him there rendering assistance at the bedside, ignorant of the nature of the eruption on his body. Up to this time, indeed, it was not known of what disease young Raabe's father died.

October eleventh, one Stick, a friend of the Raabe family, and who nursed the old man during his sickness, was taken down with smallpox. The disease was confluent and profoundly asthenic, and proved fatal on the seventeenth. Through the diagnosis made in this case, the nature of the first case was made evident. This conclusion was confirmed, too, by the characteristic eruption then well developed upon the face of young Raabe.

About this time a child of the sister of the first deceased had varioloid. It was said to have been previously vaccinated. A few days later one of the children of Stick, and also a hired man, showed the variolous eruption, and, October twentieth, the wife of young Raabe was taken with discrete smallpox. Mrs. Raabe had occupied the same bed with her husband continuously. She and a nursing infant were vaccinated by myself on the fourteenth, six days previous to the first symptoms of the disease with her. Neither of them had had been previously vaccinated. Mrs. Raabe was also advised to keep herself and child apart from her husband. The vaccination was so far successful as to lighten the severity of the disease in the mother, and to prevent it in the child.

Later in October, exact date unknown, two cases occurred in the family of a friend who had Stick while he was sick, the disease not having been recognized. They were both mild, doubtless in consequence of vaccination, to which they were subjected two or three days after exposure.

The results of vaccination in this neighborhood were gratifying. In consequence of the mistake in the diagnosis of the first case, many families were exposed, also many children who never had been vaccinated. The funeral, too, was public and liberally attended by the farming population. In addition, a school in session a few rods from Stick's house, was attended by the children of the latter, and by other pupils who were in the habit of going over to Stick's house during recess. This intercourse was kept up for two days after Mr. Stick was taken sick. Of Stick's children, four, previously vaccinated, and two adults, revaccinated, escaped. Of the other children of the neighborhood, vaccinated about the same time, only those mentioned were attacked.

On the fifteenth of October I visited Dixon, a large town a few miles from Tremont, and in constant communication with the latter, and urged the formation of a Board of Health under section 3060, Art. V. of the Political Code. This was done, embracing the infected district, and strict sanitary precautions taken. At the same time, copies of the following circular, just then issued, urging a resort to vaccination, and suggesting rules for disinfection, were distributed. The circular was also sent to all the correspondents of the State Board of Health, and to the Press of the State:

[Circular of the State Board of Health.]

FACTS CONCERNING VACCINATION, AND SANITARY RULES TO BE OBSERVED DURING PREVALENCE OF SMALLPOX.

TO THE PUBLIC: At a regular meeting of the State Board of Health, held in this city January 16, 1880, the President and Secretary were directed to issue a circular, whenever, in their judgment, the presence of smallpox in the State seemed to demand it, impressing upon citizens the importance of vaccination, and urging its general adoption. Cases of smallpox had then recently occurred in the metropolis of the State, and in or near some other neighboring cities; and, although the disease had nowhere reached the measure of an epidemic, and there was no occasion for immediate alarm, it seemed the part of prudence to take early warning and prepare for its possible more general prevalence. The constant communication going on between the City of San Francisco and the interior of the State, favored at least a liability that the citizens of the latter might contract disease and convey it to their homes.

The circular issued at that time is applicable to the present. It read as follows: "It has been recognized as a part of the history of smallpox that it occurs at certain intervals, at periods not absolutely accurate or well defined, indeed, but sufficiently distinct to attract attention. It is probable that this periodicity is due to changes taking place in the population more than to any inherent law of the disease. During the prevalence of an epidemic of smallpox, almost every one, under the influence of fear or by force of municipal law, is sooner or later subjected to vaccination, and upon many of those previously vaccinated, the operation is repeated. Only the unprotected are attacked, and the epidemic dies out at length for want of fuel. A period of rest ensues, during which a certain proportion of adults who have been vaccinated in youth acquire renewed susceptibility, and others have been gradually but continuously added to the population by birth or immigration who have never had the disease nor been vaccinated. The fertility of the soil is renewed, ready for the reception and propagation of the germs whenever accidentally introduced.

"We, in California, have passed through one of these periods of rest. Numbers have been added to the population of both city and country, and inasmuch as where there is no cause for alarm the duty of vaccination is likely to be postponed, many of these are now unprotected; new material available for the disease has sprung up.

"While, therefore, the necessity of vaccination with those who have never been subjected to this safe and simple expedient is, in times of threatened danger, specially urgent, this necessity does not apply solely to them. It is a conceded fact in the history of vaccination that, in very many cases, the immunity it affords is only limited, or for a time. Perfect while it lasts—as perfect, it is believed, as a previous attack of smallpox itself—the duration of the insusceptibility varies with different individuals. Though in some instances it is unquestionably permanent through life, it is safe to say that re-vaccination should always be tried after the expiration of eight or ten years, or, otherwise, whenever during the prevalence of smallpox it is desirable to be assured of protection. By the observance of this rule, and the general adoption of primary vaccination in youth, it is equally safe to say that one of the most loathsome diseases which afflict mankind may be effectually robbed of its terrors.

"In thus urgently recommending a general resort to vaccination as a means of protection against smallpox, the State Board of health cannot too strongly deprecate the careless and unscientific manner in which it is often performed and its results determined. In very many cases such vaccinations serve only to deceive through a false sense of security.

"Attention is respectfully called to the following general rules, the value of which has been demonstrated by the experience of the medical profession:

"1. The virus used should be of known purity. Whether in the form of the dried crust, or as lymph, certain precautions are necessary for the safe and effectual performance of the operation. This it should be the duty of the family physician to attend to. Self-vaccination or vaccination performed by unprofessional friends, unqualified to distinguish the *true* sore or vesicle from that which is spurious, affords but slight protection against smallpox. It is at least uncertain. It may be genuine, or it may not. It is to this cause that so many reputed failures in the conservative influence of vaccination are to be attributed, and that the process itself has been regarded by many with suspicion and distrust.

"2. Revaccination during the prevalence of an epidemic, or after the lapse of eight or ten years from the primary operation, is considered necessary. A scar upon the arm, the result of a previous vaccination, affords no certain evidence that the protective influence is not lost. It has been observed that vaccination performed during the active period of an epidemic is apt to be more severe in its effects than under other atmospheric conditions.

"3. Virus obtained from the arms of revaccinated persons should never be employed. There is no evidence that it possesses any protective power.

"4. With care in the selection of virus, the danger of contracting disease thereby is reduced to a minimum. It is pretty certain that only *one* disease ever has been introduced by vaccination, and with ordinary care this is impossible. It is better to avoid virus taken from adults.

"5. The dangers attributable to the operation itself are too light to weigh against its positive benefits. It has been estimated that one serious accident may occur in one case in 100,000; certainly not more frequently than would be expected from any similar wound or abrasion of the skin. Properly done, with due precaution as to the health and vigor, and the age of the subject, and the source of the virus used, it may be confidently affirmed to be altogether without danger.

"6. No so-called vaccination which does not result in what is known as a characteristic sore or vesicle, pursuing regular changes or periods of development, is safely to be relied upon. Not unfrequently the sore upon the arm arising from the insertion of worthless virus is even more severe than that resulting from the genuine lymph.

"There is no other method than that universally adopted of making the insertion upon the abraded skin, or beneath the skin of some portion of the body, which can, with any degree of safety, be relied upon.

"7. It is an interesting fact in the history of contagious diseases, and one of great practical importance, that a certain more or less definite time intervenes between the reception of the contagion and its manifestation in the body of the individual affected—a period of latency, called the period of incubation—during which certain processes are going on in the system which are somehow preparatory to the development of the disease.

"In smallpox, this period may be stated, in a general way, to be twelve days for the beginning of fever, or fourteen for that of the eruption; in the vaccine disease, or cowpox, it is three or four; and such is the protective or antagonistic power of the latter, that if its virus or contagion be inserted even after exposure to smallpox, its shorter incubative period enables it to anticipate the other, and, if it do not altogether prevent it, to induce such a deviation from its regular course as to essentially modify it and deprive it of its greatest danger. Hence the importance of an early vaccination after exposure to smallpox.

"8. Bovine virus, or that taken directly from the cow, is fashionable, and, in consequence of the excellent arrangements which have been made by different parties, it can at all times be obtained fresh and pure. It is reliable, and it is to be recommended. Yet, there is strong reason to believe, and such is the opinion of the highest authorities on this subject, that *humanized* virus, obtained from the arm of a healthy child, loses none of its protective efficacy, even when propagated through generations."

During the past month, cases of smallpox have occurred in different sections of the State, having been imported by immigrants upon the cars of the Central Pacific Railroad. The great prevalence of smallpox in Chicago, and the constant communication with that city by rail, afford easy means for the conveyance of the specific poison to California. We have, in fact, illustrations of this influence in the instances alluded to—infected persons having been received into the cars at that city, thus communicating the disease to their fellow passengers; or, parties having been exposed to smallpox there, become its victims after their arrival here.

The precautions indicated in the above circular of the State Board of Health receive, therefore, new force at this time, and the Board cannot too strongly urge upon all who have not been vaccinated, or who have not been *revaccinated* since the age of fourteen or fifteen years, to seek the protection which so simple and harmless an expedient affords. It should be remembered that even the mildest case of varioloid is capable, equally with the most severe one of genuine smallpox, of communicating the worst form of the disease.

Attention is called to the following sanitary rules to be observed during the prevalence of smallpox.

PRECAUTIONS AGAINST THE SPREADING OF SMALLPOX.

1. *Perfect isolation of the sick.* In cities, or where a suitable hospital has been provided, this is best secured by removal of the sick. In country districts, the end may be attained by allowing only nurses and attendants to visit the sick room, and these to see no other persons during the continuance of their services as such, without having changed their clothes or subjecting them to thorough disinfection.

2. All persons exposed to the contagion should be *immediately revaccinated, even though the experiment may have been unsuccessfully tried only a short time previously.* Possibly, the vaccination may have been imperfect, or the virus inert.

3. After recovery from smallpox, the patient should not be permitted to go out, or to communicate with other persons, until the crusts have fallen off, and his clothing has been renewed or disinfected.

4. After death from smallpox, the beds and bedclothes, carpets, curtains, and other articles in the room, should be destroyed, or disinfected by the method to be hereafter directed.

Inasmuch as the bodies of those dead by smallpox are still infectious, they should be disinfected, and public funerals should be avoided.

5. *Cleanliness in and about the dwelling,* and ventilation of the latter, afford efficient aids towards the success of other measures to prevent the spread of this and other contagious diseases.

RULES FOR DISINFECTION.*

The distinction between DISINFECTANTS and DEODORIZERS should be borne in mind. The former neutralize the germs of contagious or infectious diseases; the latter remove or destroy smells, or substitute one odor for another, and may or may not *disinfect.* The former are, therefore, to be preferred.

The disinfectants proper to be used vary with the object to be attained, or the articles to be disinfected.

DISINFECTION OF THE ARTICLES ABOUT THE PATIENT.

Disinfect the sheets, towels, handkerchiefs, blankets, and other articles used about the patient, as soon as removed, by immersing them in a vessel or tub containing half a pound of sulphate of zinc (white vitriol), or half an ounce of chloride of zinc, or four ounces of the sulphate of zinc combined with two ounces of common salt to each gallon of boiling water. Boil for half an hour. The articles should be placed in the solution before being removed from the room. The discharges from the patient should be received in a vessel containing one of the above solutions, or a solution of half a pound of sulphate of iron (copperas), in one quart of water. The bodies of the dead may be disinfected by washing them with the solution of zinc and salt of double strength, and wrapping them in a sheet saturated with the same solution, or the zinc and carbolic acid solution mentioned above. It is advised, also, to sprinkle the floor with a solution of carbolic acid (one ounce) and sulphate of zinc (six ounces) to one gallon of water. Neither the sulphate of zinc solutions, nor that of the chloride of zinc, will stain or injure ordinary articles of clothing. These may, therefore, be used for

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* The rules for disinfection are substantially those recommended by the National Board of Health.

THE DISINFECTION OF THE CLOTHING.

Clothing which will not admit of being boiled, and which is too valuable to destroy, may be sprinkled with one of the last named solutions, or the latter may be applied by means of a sponge, the articles themselves being subsequently exposed to the open air.

Other clothing, as silks, furs, woolen goods, and the like, to which the above means are not applicable, should be suspended in the room during its disinfection by the method immediately to be explained, and afterwards exposed to the open air. Furniture, pillows, mattresses, window curtains, and carpets, should at the same time be exposed to the process. It is advised that the carpets should be fumigated on the floor, and the mattresses ripped open for more thorough exposure.

DISINFECTION OF THE HOUSE OR INFECTED ROOM.

For this purpose, sulphur is used. The rule is to take roll sulphur broken into small pieces, place it on a metallic dish resting upon bricks set in a tub containing water, or upon other supports laid across the tub; pour a little alcohol upon the sulphur, and ignite it. Then immediately leave the room. Let the doors and windows be tightly closed, and kept so for half a day. Then ventilate the apartment for several hours. One pound of sulphur is advised for one thousand feet of cubic air space. The furniture and paint about the room may be subsequently washed and the walls whitened.

Other substances have been advised as disinfectants for the various purposes above alluded to, but those mentioned are cheap, effective, and within reach of all.

F. W. HATCH, M. D.
Secretary State Board of Health.

Sacramento, Cal., October 24, 1881.

H. GIBBONS, Sr., M. D.
President State Board of Health.

In the same month (October), a lady, with her child, returned from a visit to Chicago to her home in Colusa, and was soon taken down with smallpox and died. Her child, who had been vaccinated, and was then re-vaccinated, escaped. The strictest isolation was enforced, general vaccination resorted to, and no other cases occurred. Let these facts be placed to the credit of vaccination and well directed sanitation. In October a well defined case of smallpox was noted in Eureka, Humboldt County, imported from San Francisco. The patient was removed to an isolated locality. The result, whether fatal or otherwise, is not stated. Again, in October, two cases of varioloid occurred in Los Angeles, in the persons of emigrants from Chicago, by the Central Pacific railroad.

From the above review, it will be seen that the origin of the disease in the four counties was by importation by the Central Pacific railroad, via Chicago, the cars, in all save one case, having been emigrant cars. From these cars there is the greater danger in consequence of their construction, their usually crowded condition, the arrangement of the bunks or sleeping apartments, and the poor ventilation.

During this time, and for some time previous, smallpox had assumed alarming proportions in Chicago, and other cities of the Atlantic States having rapid communication with this State. It had reached Oregon and Washington Territory, occasioning much alarm in the latter; and there seemed to be a reasonable ground for apprehension that it would be yet further introduced into this State, and that, gaining a foothold in the interior towns, and in the mining and agricultural districts, many lives would be sacrificed. After much deliberation, and fully comprehending the difficulties of the undertaking, and the possibility of opposition, in the absence of any specific law authorizing the measure, the State Board of Health, at a special session held in October, and again November 11th, 1881, determined to recommend a thorough inspection of cars, and the establishment of a moderate and temporary quarantine of approaching cars near the State line. The idea of absolute non-intercourse was not entertained.

It was intended as a provisional, precautionary measure—a brief delay and detention of any found to be suffering with smallpox, and of others on infected cars—a detention limited, at the farthest, to the completion of twelve days intervening between the date of exposure and the termination of the period of incubation. The vaccination of all the passengers on infected cars, and thorough disinfection, were also included in the plan proposed. Perhaps the following abstract from the minutes of the Board will be appropriate in this place:

SACRAMENTO, November 11, 1881.

The State Board of Health met at the usual hour. Present—Dr. H. Gibbons, Sr., Dr. W. R. Cluness, and Dr. F. W. Hatch. * * *

The Secretary stated that he had requested the call of the present meeting to consider matters in relation to the establishment of a quarantine for the railroad cars coming into the State by the Central Pacific Railroad. At the last meeting of the Board a moderate quarantine system was advised near Sacramento, and the suggestion was approved by the Board, and referred to the City Board of Health. That body has since met and fully indorsed the necessity of early precautionary measures against the introduction of smallpox from Eastern cities. Subsequently to the special meeting of the State Board of Health, however, the question of quarantine has been agitated by the press and public, and the suggestion made that, in the absence of any statutory law providing for inland quarantine, the Governor might well assume the extraordinary power of authorizing the Board to proceed at once to carry out such measures as, in its judgment, might be necessary to afford protection. The authority for this action is well and forcibly stated in the communication on this subject received from the Governor. By request of the Governor the Secretary had a consultation with him in relation to the present state of facts regarding smallpox and the danger of its introduction, and it was agreed that a communication covering the ground should be addressed to him in an official capacity. This was done on Monday, the eighth instant, and the same day the following reply was received directing the State Board of Health to proceed immediately to carry out the measures suggested.

STATE OF CALIFORNIA, EXECUTIVE DEPARTMENT,
SACRAMENTO, Cal., November 8, 1881.

F. W. HATCH, M. D., *Secretary of State Board of Health:*

DEAR SIR: I have the honor to acknowledge receipt of your very able report, as the Executive Officer of the State Board of Health, relating to the enforcement of proper sanitary measures in the prevention of the introduction of smallpox within the limits of our State, through the medium of inland communication. The question is indeed a serious one, and demands prompt and energetic action. While no statutory law of a general character exists to aid your Board in its efforts, the universal law, recognized by the savage as well as the civilized man, whose justice is acknowledged alike by the heathen as well as the Christian—that self-preservation is the first law of nature—comes directly to our aid. It is the paramount principle of our nature, and to save our people from the affliction of a terrible loathsome disease, it is imperatively our duty to use every exertion, every precaution, to arrest the progress of such an infliction.

If a vessel, with but one afflicted person suffering from a contagious disease, can be quarantined for weeks until all possible danger to a community has passed, how much should the transfer of human beings through the medium of railway communication be guarded? The one is comparatively isolated. No one can come in contact with its human freight by virtue of the peculiar circumstances which surround it. The other comes in daily, hourly, in contact with the inhabitants of the places through which it passes and stops.

The germ of the disease is taken up by the wind and disseminated through distant regions; constant personal contact is the rule; no safeguard exists to prevent it, as the disease has not as yet been made palpable to the sight. Therefore the greater and more urgent is the necessity to use every means which science and common sense has taught us to employ in checking the introduction of this scourge in our midst.

I would suggest that two inspectors be appointed by your Hon. Board, acting under your directions, one of whom shall be stationed between Truckee and the northern line of the State, and the other between Colton and the southern line. I beg here to acknowledge the willing and ready manner in which the officials of the respective railroad companies responded to your request. You will use the State's appropriation as far as you can to carry out the views expressed in your report; that failing, such funds as are at my dispossal for extraordinary purposes, shall be devoted in the further aiding of this necessary and compulsory sanitary measure.

Yours, very respectfully,

GEO. C. PERKINS, Governor.

In pursuance of this order he had made arrangements, subject to the approval of the Board, *for an Inspector, had prepared a draft of specific instructions for his guidance,* so far as he felt authorized to do so without the assistance of the other members of the Board, and had received the assurance of Mr. Pratt, the gentlemanly Superintendent of the railroad at this place, of the cöoperation of the railroad authorities to the extent of their ability.

About some matters the Secretary was in doubt. Should a car with all its passengers upon which smallpox was found, be detained up to the ordinary incubation period of the disease? If so, and this was certainly the only proper plan, how shall the passengers be provided for? He desired an expression of the views of the Board upon these and other questions in relation to the subject.

The Secretary stated that he had appointed, subject to approval, Doctor E. C. Rhodes, of this city, as Inspector for the Central Pacific Railroad.

On motion, it was resolved that for the present no urgent necessity exists for the extension of quarantine on the southern route. In this connection, the Secretary read a telegram from Doctor J. P. Widney, of Los Angeles, stating that an inspection of all cars entering that city had already been instituted.

The Secretary read a draft of a letter of instructions which had been prepared for the Inspector. This was amended and adopted as follows:

"E. C. Rhodes, M. D.—Dear Sir: You are hereby appointed Medical Inspector for the State Board of Health for the district between Sacramento and the State line near Boca, and the following general rules are published for your guidance:

"You will take a convenient position at some station near the State line and inspect the emigrant cars on their arrival, at the same time making inquiries of the passengers as to the existence of any sickness on board at the time, or as to there having been any eruptive form of disease among them since leaving Chicago. In this investigation valuable information may be obtained from the conductor and other employes of the train.

"Should any case of smallpox be discovered upon any car, you will direct said car to be quarantined, or side-tracked, at a point suited to the well-being and comfort of the sick, and at the same time adapted to the convenience of the railroad company. It is desired that the work to be done should be so ordered and conducted as to subject the company to the minimum of inconvenience consistent with its energetic and efficient discharge in the interest of public health.

"The other passengers on infected cars should be transferred to another car, but not mixed with passengers on uninfected cars. You will examine them carefully to ascertain whether there are any unvaccinated persons among them. All such should be immediately vaccinated, making at least two points of insertion. You will also vaccinate all upon the infected car, and detain them for a period of twelve days from the date of their exposure to the disease.

"You will also inspect the express trains coming West, and satisfy yourself that no cases of smallpox were on board. In this examination the conductor and other employes of the cars will be of essential service to you. Should you be satisfied of the presence of smallpox, you will adopt the means just recommended for emigrant cars.

"If, upon inquiry, you find that any passenger upon a car has been sick with smallpox during the trip from Chicago, and has died or been removed from the car, you will consider such car to be *infected*, and proceed therewith in the manner directed for cars upon which smallpox has actually been discovered.

"When any car containing smallpox has been quarantined, you will aid the railroad authorities in seeing that the passengers thereon are well and comfortably cared for, and that the car, after the recovery or removal of the sick, is thoroughly disinfected according to the rules laid down in the general instructions for disinfection issued by the State Board of Health.

"You will be expected to keep a record of cars quarantined, cases of smallpox discovered, and vaccinations and revaccinations performed, and of every other proceeding under the duties assigned you, and to report the same in writing to the Secretary of the State Board of Health at least every third day.

"The duties to which you are assigned are important yet delicate, and the State Board of Health trusts to your discretion and good judgment so that they be exercised with prudence, and with an endeavor to disarm opposition by a courteous and dignified appeal to reason, and the demonstration of the necessity of the measures adopted rather than by the exhibition of arbitrary authority.

"By order of the State Board of Health.

"F. W. HATCH, M. D.
"Secretary State Board of Health.

"Sacramento, California, November 11, 1881."

After a general discussion of the subject, and of the means at the disposal of the Board for carrying out an effective quarantine, and certain verbal instructions for the Inspector agreed upon, the Board adjourned subject to the call of the President.

Having been supplied with a quantity of bovine virus, and other articles required for disinfecting purposes, Dr. Rhodes entered upon the discharge of his duties November 12th, stationing himself at Truckee, but traveling daily between Boca and that point for the purpose of inspecting the passengers coming west.

The first cases of smallpox were discovered in two passengers—Frenchmen—on an emigrant train, on the 9th of January, 1882.

This train, consisting of two emigrant cars and a caboose car, containing the railroad hands, was side-tracked at Tunnel No. 15, about sixteen miles east of Truckee. It was desired to detain them about three fourths of a mile from Truckee, but the excited citizens opposed it. All the passengers were vaccinated, and the sick isolated as far as possible from the other passengers. Provisions were procured at Truckee, and every effort was made to secure the comfort of the unfortunate immigrants. Credit is due to the passengers themselves for their submission to restraint. Although a slight opposition was at first manifested, in consequence of the disorderly conduct of one of the train hands, the propriety of the measure was soon conceded, and the inconvenience of detention borne with contentment and even cheerfulness.

Upon inquiry, it was learned that one of the sick men was put on board the cars at Omaha, January 2d, already sick with the initiatory fever of the disease, the eruption having shown itself on the second day after leaving that station. The disease appeared about the same time upon his brother, but so mildly as to attract but little attention.

Seven days after the first exposure of the passengers to contagion, *i. e.* on the 10th, upon visiting the quarantine ground, and ascertaining the facts, the officer in charge was requested to detain the passengers until the expiration of the twelfth day. Four individuals, who were said by the Inspector to have previously had smallpox, were disinfected and allowed to depart on the 11th of the month. By the evening of the twelfth day of exposure, a third car having been provided, the passengers after disinfection, were removed thereto; their baggage, clothes, together with the infected cars, being subjected to thorough fumigation. The two patients were removed to and made comfortable in a box car, where they were detained until it was considered safe to discharge them. On their discharge, they were provided with new and uninfected clothing.

For the purpose of securing yet further protection, on January 14th, I addressed the following communication to General Superintendent A. N. Towne, of the Central Pacific Railroad:

SACRAMENTO, January 14, 1882.

A. N. Towne, General Superintendent C. P. R. R.:

DEAR SIR: The prevalence of smallpox in many of the Eastern cities, and the easy and rapid communication between them and California, by means of the routes of railroad under your supervision, make it extremely desirable that unusual precautions should be adopted to prevent its gaining a foothold among the counties of the State. It is assumed that the railroad companies have, at least an equal interest, both as individuals and in their corporate capacity, with citizens generally in securing immunity from this scourge. The inconvenience resulting therefrom, and the restless, uneasy state of the public mind, consequent upon the presence of this disease, has been but feebly reflected in the cases recently discovered in the cars of the Central Pacific Railroad at Truckee. The instance cited, too, shows forcibly the necessity of constant watchfulness if the introduction of the disease is to be prevented.

One of the cases entered, or as stated by passengers, was *put upon* the cars at Omaha, sick and almost helpless with a fever—even at that time capable of communicating contagion. The eruption must have been pretty well developed upon his arrival at Ogden, and ought to have been detected there by careful observation. Had this been done, his isolation could have been accomplished, and his fellow passengers much more certainly protected by vaccination than was possible on the arrival of the train at Truckee. Too great a time had then elapsed since the first exposure to the disease to secure for the unprotected the full benefit of so simple an expedient. If the disease had been detected at Ogden, the care of the sick could have been submitted to those who brought them there, while much greater confidence would at that time been felt in the success of efforts to secure immunity for the passengers and the personnel of the road. The latter, from their necessary intercourse with the passengers, are especially exposed to the sources of infection—as in the handling of tickets, bank-notes and baggage. This is true of all trains, but especially so of immigrant cars, which in their usually crowded condition, and in their internal arrangement, present a most perfect contrivance for the concentration and communication of disease germs.

The State Board of Health are laboring, though under many disadvantages, to prevent the introduction of smallpox from any source, and, with this view, respectfully ask you to consider the following propositions:

First—That the train hands on roads under your supervision, connecting with trains from eastern cities, be required to be vaccinated or revaccinated, as the case may be; and,

Second—That directions be given to the conductors of such trains to satisfy themselves, as they may be able, before leaving the eastern termini of the roads, that no cases of smallpox are admitted to the cars, and in all cases of doubt, to consult the medical officer of the company stationed there. It is possible that the company of which you are Superintendent may have already taken some measures to protect its own interests as well as those of the traveling public, in this connection. If so, theyare unknown to the State Board of Health, and in the discharge of my duty, I make the above suggestions, as likely, if rigidly enforced, to effect good results. By cöoperation between the Railroad Company and the health authorities, we may hope to escape serious evil.

Very truly yours,

F. W. HATCH,
Secretary State Board of Health.

To the above communication the following reply was received:

CENTRAL PACIFIC RAILROAD COMPANY,
GENERAL SUPERINTENDENT'S OFFICE, SAN FRANCISCO, January 17, 1882.

Dr. F. W. Hatch, Secretary State Board of Health, Sacramento, California:

DEAR SIR: Acknowledging receipt of yours of the fourteenth instant, just at hand, I would say that we are disposed in every way to act with you in the good work in hand, and have arranged for a careful examination of all people arriving upon our trains at Ogden and at Tucson, and in case any are found ill, the Quarantine Officer at the former place is to be called, and our own physician at Tucson. Similar arrangements we expect to make at El Paso and Deming. With regard to vaccinating our train men, the order has gone forth.

Very respectfully,

A. N. TOWNE,
General Superintendent.

I have been thus particular in recounting the history of the quarantine on the Central Pacific Railroad, and the circumstances which led to it, because it was foreseen that the act would be taken exception to and its necessity depreciated. There are everywhere those who are ready to cavil at official acts, however well intended, and who seize with avidity upon the slightest circumstance which seems to lend plausibility to their criticisms.

The difficulties encountered in the undertaking have been partially explained. That it would fulfill the measure of a perfect system was not expected, and that it should have failed in the person of one out of forty-seven passengers was, perhaps, no more than might have been expected.

It has been ascertained that one of the passengers, one Reinhart, after having been discharged from quarantine, was admitted to the pest house at San Francisco, January 27th, and died February 2d. The individual was one of the four who were reported to me as having had smallpox, but who had been vaccinated and disinfected, and were released on the twelfth. Reinhart, as I have since learned, did not come through from Omaha, but entered the train at some point this side. The contagion was, therefore, received by him at a later date than by the other passengers. I am informed by the Medical Inspector that the man stated that he had smallpox some years previously, and that he himself had examined the cicatrices or pocks upon his body. His discharge, therefore, though unfortunate, was not really an error, in view of the infrequency of a second attack of the disease. Nor can the vaccination be blamed for the result, for it is known that this operation, even though most skilfully performed, with the best bovine virus, will fail, even as a primary operation, in about eight or ten cases out of a hundred. The result, as it eventuated, could not have been anticipated; nor does it detract from the merits of the quarantine. That, of forty-seven passengers, a number of whom had never been previously vaccinated, forty-six should have escaped disease, seems rather to afford gratifying evidence of its success.

That any quarantine, temporarily and somewhat hurriedly established as was this one, with limited means for its support, with many inconveniences attending its management, resting for its existence, not upon statutory law, but upon that unwritten law appealed to by his Excellency the Governor, which provides for States, as well as individuals, the right of self-defense, should be capable of so overcoming obstacles and prejudices as to be capable of arresting the approach of a disease so highly contagious and infectious as smallpox, at a time when the tide of immigration was steadily flowing from infected localities, was almost too much to anticipate. It was foreseen that some infected passengers might easily come through who had not yet passed the ordinary period of the incubation of the disease, and, therefore, undetectable. It was thought possible that some already sick, but not yet showing an eruption, might escape the vigilance of the medical officer in charge. The fact was recognized, too, that while the incubative stage of smallpox is usually twelve days, it may be exceptionally extended considerably beyond this, and while we were not justified in detaining passengers in quarantine for a longer period than that which usually limits its duration, we were compelled to assume the risk involved in this uncertain feature of the disease. Yet it was hoped that sufficient good might be done to compensate for the expense and inconvenience attending the experiment. It was worth the effort. A partial success was better than indiscriminate exposure, and the propriety of the measure, it may be confidently asserted, has been sustained by an enlightened public sentiment. Yet, it should be repeated that quarantines of this kind and for this purpose should be resorted to only under urgent circumstances. It cannot be too often reiterated that, if vaccination were generally adopted, if it were made compulsory, the danger of an epidemic of smallpox would be reduced almost to an infinitesimal quantity. I do not mean vaccination as often performed by parents upon their children, or by ignorant itinerants who proffer their services for a fee, but never take the care to ascertain whether the sore produced is genuine, and who would, perhaps, be unable to distinguish the true from the spurious; but vaccination in its perfectness, done with active, reliable lymph, properly inserted, and carefully inspected by a competent judge at the right time. It is the neglect of proper care in the simple matter of vaccination that has shaken the faith of so many in its efficacy.

The idea of a general system of compulsory vaccination would probably excite opposition among those unwilling to be convinced of its efficacy. But the State has a duty to perform in this connection which should not be unheeded, and we, the chosen advisors of the State in matters pertaining to public health, should not hesitate to point out the true policy, and seek to educate the public as to the vast benefits to be derived from so safe and simple an operation.

We may, however, secure this result, more slowly indeed, yet with equal ultimate certainty through our common schools.

The State is the legitimate guardian of its youth. It is upon each succeeding generation that the future prosperity of the State must depend. It has provided a munificent system of education for all who are willing to avail themselves of its advantages. As it would undoubtedly have the right to exclude from the schools any one having smallpox or other contagious or infectious disease, so it surely has the right to place its interdiction on those who, by neglect, might render themselves in any way liable to become the carriers of this loathsome disease.

Let it be established, then, that no unvaccinated child shall be permitted to enter the school, and let the Trustees of schools everywhere, in every school district in the State, be required to enforce this law—the penalty being the forfeiture of the State support. Happily, in some of the cities a stringent rule has been adopted. But it should be universal. It should apply to the country not less than the cities, for all are liable to exposure. Indeed, the history of smallpox in this State during the past two years has shown that it has prevailed in the country, in respect of localities, quite as generally as in the cities. A law similar to that suggested is to be found on the statutes of New York, and perhaps other States; and though it appears to have been very loosely obeyed, on the principle of fancied security in the absence of any pressing menace, the State Board of New York have recently called attention to it, and demanded its enforcement.

I respectfully suggest that the consideration of his Excellency, the Governor, and of the Legislature, be earnestly invited to this subject. A law like that alluded to, but modified, if required, to suit the situation in this State, rigidly enforced, would afford us, in a comparatively few years, a population so nearly exempt from liability to smallpox as to render a sweeping and disastrous epidemic of that disease quite impossible.

Such is my faith in vaccination, and such is the legitimate conclusion warranted by the whole history of the measure from its first introduction by Jenner to the present day.

In the State of Illinois, the State Board of Health, having authority, issued an order, December, 1881, requiring the vaccination of all school children. A recent report of that Board contains the following in demonstration of the wisdom and utility of this order:

> *First*—That among the thousands of cases of smallpox which have occurred in the State since the order was issued, not one is reported of a public scholar who had been properly or recently vaccinated. Several cases, however, with a large proportion of deaths, have occurred among scholars who had either not been vaccinated at all or not since infancy.
>
> *Second*—That in no instance where the order was thoroughly enforced has it been necessary to close the public schools, even when smallpox existed in a community. On the other hand, schools have been broken up and studies interrupted in a number of instances where—as shown by the returns in this office—the order had been neglected.
>
> An examination of the reports thus far received shows that more than two thirds of the total school population of Illinois, were unprotected against smallpox on the first of December, 1881.
>
> Of the two million vaccinations within the past eighteen months, over thirteen hundred thousand have been performed since the first of January, 1882, as the result mainly of this vaccination order, and of similar measures instituted by the State and local Boards of Health. Until these measures were fairly under way there was a steady increase of the smallpox—but coincidently with their successful operation came the decline of the disease, until now it is practically at an end in Illinois.

Some of the difficulties under which the State Board of Health has labored, in its contest with contagious disease, during the past year, have been recounted in the imperfect review just now given. They have consisted mainly:

First—Of the absence of any statutory law for an inland quarantine or inspection, and,

Second—Of the want of funds specially applicable for the purpose.

These subjects are important, and deserve careful consideration, inasmuch as they may concern the future action of this Board. Perhaps the occasion to adopt even the limited measures of restriction thought proper last Winter, may not soon occur again; yet it is liable to recur at any time, if not against smallpox, against cholera or yellow fever; and I deem it the duty of the State to adopt, and our duty as a Board to urge the passage of a law making provision for this possible contingency.

In the emergency which arose last year, the Board were literally without means. The appropriation of the last legislative session was intended to cover only its ordinary and necessary expenses; and they were compelled to devote to this extraordinary and unforeseen purpose a part of that fund which might profitably have been applied to other important and much needed objects. A very small sum might very profitably be appropriated by the Legislature to the prevention of the introduction into the State of contagious and infectious diseases, to be expended by the State Board of Health for this purpose only.

The Legislature should also legitimize the establishment, under circumstances deemed urgent, of inland inspection of the routes of travel, and a quarantine of infected passengers and means of conveyance. I am sure that none more than the members of this Board would deprecate the necessity of any such interference with or interruption of communication to the State. But that which has happened in the past may happen again, possibly under circumstances much more urgent and imperative than any yet encountered. It is the part of wisdom to be prepared for it.

The measures usually adopted for the prevention of contagious diseases may be embraced under two heads, viz: first, *disinfection*, and second, *isolation*. With the latter properly belongs *quarantine*. The aim of disinfection is twofold: first, to destroy the disease germ; secondly, to modify it, or render it inert. In the case of smallpox alone among the contagious diseases, we have another effective agent in vaccination. Of this, enough has been said in the preceding pages.

Quarantine has for its object on a large scale what isolation is designed to secure for individuals. Indeed, quarantine seeks to effect nothing more than the isolation of the sick. It isolates, to an extent necessary for the accomplishment of its purpose, the town or city from the outer world, just as a single house is isolated by the yellow flag or other police regulations. The recent action of the State Board of Health was somewhat different from this. It was intended to effect far inland intercommunication what quarantine does for our seaports—to exclude from a yet healthy district the infected from other districts in which contagious disease is known to prevail. It was not, as has been already said, designed to prohibit all intercourse, but simply to restrict communication with the sick and those infected by them—to exclude, or shut out, the infected from the State. Something of the same kind was organized during the past year in the State of New York. The City of Buffalo, (immigrants on the trains, going to that city, having been discovered suffering from small-pox, and conveying the disease westward) instituted, under advice of the State Board of Health, an inspection of all immigrant trains approaching the city until such time as vaccination should be required by law on all ships coming to United States ports. It was ascertained, too, that the number of immigrants landing in the United States at Port Huron was excelled only by those arriving by New York City, and Dr. Harris, the Secretary of the State Board of Health, observes that the "National Board has already engaged to maintain the cost of a competent Inspector of immigrant trains that cross into Michigan at Port Huron, and the two proposed stations in the State of New York (Buffalo and Elmira) will, it is believed, become the most important that can be established, excepting one that ought to be established at or beyond Harrisburg, Pa." In these and other measures taken about the same time, the State Board of Health acted under authority given by law. Such authority should be given in this State. It is for the purpose, in part, of protecting the State against the invasion of infectious disease that the organization of State Boards of Health are being effected in so many States. Let the Board not be left powerless to act, without weapons of defense, helpless in the hour of danger, unsupported in the presence of the foe.

RAILROAD INSPECTION.

Reference has already been made to this subject in a preceding portion of this report. It is sufficiently important to justify separate consideration.

A constant danger menaces the State through the influx of immigrants from foreign countries, bringing with them the germs of contagious and infectious diseases. Almost equally hazardous is the general and rapid communication going on between States. Through the former source, mainly, but to some extent through both, proceeded the widespread epidemic of smallpox with which many of States were afflicted during the past year, and to which some space has been elsewhere devoted.

The subject has assumed a serious aspect, commanding the earnest attention of the sanitary authorities of the States more immediately interested, and of the National Board of Health. The rapid transportation of passengers from the various ports of entry, as of New York or Baltimore, to all parts of the country, greatly increases the danger as compared with times when railroads had not so completely intersected the States, and makes it easy for an immigrant arriving at one of the above ports in apparently good health, to become the carrier of contagion, and to be seized with smallpox, for example, upon his arrival at his place of destination, three, five, or even twelve days thereafter; thus have the seeds of this loathsome disease been recently sown in many parts of the country, and the danger must constantly remain, the same result must forever be recurring, unless effective measures be taken to arrest it. So, too, was the infectious principle of yellow fever disseminated through interstate communication a few years ago, until opposed by a most rigorous system of inspection and quarantine under the energetic action of the National Board of Health.

We in California, so far as regards smallpox at least, though so remote, in point of distance, from the principal seaports and the great centers of population on the Atlantic coast, are exposed only a little less in degree than are the States east of the Rocky Mountains. By this rapid transit on railroad lines, we are brought near to them in point of time, so near that an infected passenger, upon whom the disease had not yet manifested itself by signs or symptoms, may innocently communicate the contagion on his arrival, or, if traveling by the slower trains taken by the vast majority of immigrants, on the cars after, or even before reaching the California State line. Our risk is greater now than at any former period in the history of the State. Two through lines of railroad already connect us with the Atlantic States, exposing us to the contagion of smallpox, not alone by direct immigrations through seaport cities, but by the stream of travel along many intersecting lines from States in the Mississippi Valley and elsewhere, and we are about to reach the full measure of danger in the completion of a new and cheap avenue for immigration from foreign ports, through Texas or New Orleans, under the auspices of the Southern Pacific Railroad. The completion of this road to the gulf, while not sufficient to excite uneasiness in the public mind, opens an easier route for the approach of yellow fever; already it has invaded and occasioned considerable mortality in towns in Texas, and its extension Californiaward would not meet the same obstacles which it has hitherto encountered in passing along the lines of travel from the gulf cities. Hitherto it must have come this way, if it came at all, through the northwestern States, and at so late a period as probably to be checked by frosts. A more direct road is now open to it, yet yellow fever travels slowly and by somewhat regular advances; it is apt to give timely notice of its approach; only let us be prepared to meet it, let us have the power to act effectively on the defensive should the necessity arise.

Returning to the case of small-pox, it must be admitted that, however strict and diligent may be the inspection at the quarantine ports, many immigrants must inevitably pass through who, though infected, are not yet sick. Such has been demonstrated to be the fact in the past.

Hence, in April 1882, the State Board of Health of Illinois—an organization invested with far greater power than our own State Board and many others—determined to exercise a supervision over the trunk lines leading into Chicago, for the inspection of all immigrants in transit westward, and, where necessary, their vaccination.

This action was taken with the coöperation and aid of the National Board of Health, and the State Health Boards of New York, West Virginia, Kentucky, Indiana, and Michigan, and the health authorities of Pittsburg, Cincinnati and Detroit. It was stated that the object was not to exercise the quarantine power vested by law in the Board, except as a last resource.

In the Bulletin of the National Board of Health, June 10, 1882, it was stated that the sanitary inspection of immigrants had been undertaken "at the request of the State Board of Health, and in coöperation with the State and local health authorities." The circular, so far as related to interior inspection, says: "In coöperation with railroad companies there have been stationed at suitable places on the great trunk railroads, inspectors, whose duty it is to inspect the emigrants on the trains. Cases of small-pox found in transit are immediately isolated, and, at the earliest possible moment, removed to a contagious-disease hospital, where they are properly cared for and their baggage disinfected. All unprotected are vaccinated. These duties are for the most part performed on the trains, and in such a manner as to interrupt to the least extent possible, the movement of the emigrants to their destination." The stations, at which inspections were made, and for which medical inspectors were appointed, were located in points in New York, Pennsylvania, Maryland, Michigan, West Virginia, Ohio and Illinois.

Such inspections were capable of affording protection to States west of Illinois, even to those on this side of the Rocky Mountains, under favorable circumstances, but as the period of incubation of smallpox varies, being seldom less than twelve days, and reaching, occasionally, beyond this, they cannot be relied upon by us in California. The public security demands an effort of our own; it appeals to us to take all necessary measures for our own protection.

It will be seen that the object in the cases cited has not been to establish a *quarantine*, unless such extreme measure be considered absolutely necessary, but merely to institute a thorough inspection—to isolate the sick.

Such a measure could not reasonably be supposed to interfere with the business of the roads. There could be no serious objection made to it, as indeed there could not have been to the extreme alternative of a quarantine under urgent necessity.

A law vesting in the State Board of Health of California the power to establish such a system of inspection, with authority to compel the vaccination of all unprotected immigrants, would be the means of arresting dangers to which we must otherwise be continually exposed. Even if no cases of smallpox were discovered, the power to enforce vaccination, and the consequent extension of this beneficent measure to all unprotected persons, would prove of incalculable value. It is to vaccination that we must look for ultimate protection, and each individual upon whom this simple operation is performed, detracts so much from the general liability to disease.

But if, in the maintenance of the inspections proposed, a temporary detention of cars should become necessary, there is no reason why railroads passing from State to State should not be made subject to like quarantine restrictions with vessels coming from domestic ports. In either case it is an evil, a misfortune, an inconvenience, but only such an inconvenience as may properly be demanded of the few for the public good. There should be no discrimination between railroad lines and steamship lines, but the strong arm of the law should be interposed to avert dangers from whatever source they may come.

We can do the State no greater service in this direction than by securing the passage of a law to place the system recommended into full and effective operation, whenever, in the judgment of the health authorities, it may be required. I would like strenuously to urge this subject upon the attention of his Excellency the Governor, and the Legislature. It calls for serious consideration. The appeal is in behalf of human health—the protection of our families; and the privilege is one that a wise and good Government ought to grant. Boards of Heath, to be effective, to carry out with benefit to the State the high mission intrusted to them, must be invested with reasonable power. It avails but little to recognize an evil without the power to avert it. Mere advisory powers can never enable them to fulfill the important trusts for which they are established. Advice may or not be followed. It seldom will be when it conflicts with supposed individual interests or corporate rights; yet, individual interests and corporate rights, it unfortunately happens, are not always in accord with what the public good demands. Strictly speaking, they ought to be identical. In a hygienic sense, what benefits the public benefits the individual. It is mainly when pecuniary interests are involved that a conflict occurs. By what scale can these be reckoned against life and health?

What has been said will be seen to have reference mainly to protection against smallpox. It is with regard to this that the need of a law providing for railroad inspection has been urgently needed during the past year. But, as already hinted at, other dangers may come upon us—dangers more sudden in their invasion, more rapid in their progress, and requiring the most energetic measures. When disease does come it may not be possible to obtain legislative authority for these restrictive measures, and the State Board of Health will find itself again crippled, compelled to do that by sufferance and by virtue of an act of favor which it ought to have the undoubted right to do.

The principle applies to the whole class of epidemic, contagious, or infectious diseases.

The passage of a law such as has been suggested, by no means necessitates the exercise of the authority conferred. The object is to provide against emergencies which may arise—to legalize such action as the safety of the Commonwealth may justify and demand.

APPENDIX.

The Board of Health, while generally approving the papers presented in this report, are not responsible for the particular sentiments expressed.

BOARD OF HEALTH.

THE SOUTHERN CALIFORNIA CHANNEL ISLANDS AS HEALTH RESORTS.

By J. P. Widney, M. D., Member of the State Board of Health.

As a person takes one of the coast steamers and sails south from San Francisco, he begins to notice, the afternoon of the second day, after rounding Point Concepcion, an occasional island lying to the seaward of the vessel's course. He still notices them until he reaches the port of San Pedro, opposite which lie Santa Catalina and San Clemente, the last of the number. This chain of islands forms the outer boundary of the Santa Barbara channel. The larger islands are six in number, called, in their order coming South, San Miguel, Santa Rosa, Santa Cruz, San Nicolas, Santa Catalina, and San Clemente. They seem to be the remaining peaks of a submerged range of mountains which ran parallel with the present coast line. They vary in distance from the main land, ranging, however, from twenty-five to fifty miles off shore. As to size, they vary from three to twenty-five miles in length, and from one to five in width. They are rocky masses, with a light, tolerably fertile upper soil, yielding a fair growth of the annual herbage of the California coast, and having more or less of a low scrubby dotting of chaparral, with some few trees. Running water, except in the rainy season, is not found; but there are some few springs, and well water is readily obtained at reasonable depths. The elevation above the sea varies from a few feet to low peaks of some hundreds of feet. These islands have been used for many years as sheep ranges, the sheep taking care of themselves, and the owners going over twice a year to shear them and bring back the wool. The eastward trend of the coast line, below Point Concepcion, gives to these islands, in common with the main land of Southern California, shelters from the strong, rather harsh northwest wind, which, in Summer, sweeps daily, inland, over the northern portion of the State. Yet, while having the general characteristics of the Southern California climate, they possess climatic peculiarities of their own which are well marked. Their distance from the main shore frees them from the force of the sea breeze which daily blows inland, and which, mild as it is, is still too fresh for many delicate invalids who yet crave, and are benefited by, the salt sea air—that class of invalids who, while they can, with impunity, take a sea voyage, cannot dwell by the borders of the sea. The distance from the main land also exempts them, in a great measure, from the night fogs which hug the coast. Their limited area does not suffice to produce a sea breeze or fog system of their own.

With all that has been said and written about the many climates of California, and their comparative advantages as health resorts, the climate of these islands seems to have been overlooked. And the climate is a peculiar one, unlike any other to be found upon the Pacific Coast.

I shall more particularly describe Santa Catalina, which, from its position off the Port of San Pedro, the ocean terminus of the whole southern system of railroads, is the most noted as a place of resort. The island lies about twenty-five miles from the main land; has a length of some twenty-five miles, with a width of from three to five, but narrowing midway to a neck only a few hundred yards across. This indentation upon the landward side forms what is marked upon the maps as Catalina harbor, a rather open haven, offering fair shelter, however, to a limited number of vessels. The island has rather a broken, hilly surface, rising at one or two points to a height of some hundreds of feet. Many persons go over each year from Los Angeles and camp upon the island for the Summer months. The favorite camping ground is at or near the narrow portion of the island which I have mentioned. Here, upon the ocean side of the neck, is a firm sandy beach, with the full roll of the breakers, offering the finest surf bathing, while upon the harbor side is only a gentle swell, not even breaking upon the shore, and affording unrivaled facilities for a sea bath to those who dread, or are not strong enough to encounter the surf. The comparatively sheltered waters of this bay offer, also, especially fine opportunities for boating and fishing. The water is so serene that the sandy bottom, covered with shells and sea plants, is plainly visible at a depth of fifty feet.

During the Summer months a vessel runs constantly from the port of San Pedro to Catalina Harbor, for the accomodation of passengers. There is no hotel upon the island, parties having to camp out, but in the mild, equable, rainless, Summer climate, which changes little night or day, this is rather a benefit to invalids, who here run no risk from inclemency of weather. The time is rapidly coming, however, when, as the peculiar advantages of the island as a health resort become more widely known, ample hotel accommodations must be provided.

The peculiar merit as health resorts possessed by these islands, consists more especially in this, that while lying within the line of a semi-tropical climate, and that climate one entirely exempt from the scourge of yellow fever and the ordinary southern diseases, their comparatively small size, and their distance from the mainland, free them from even the ordinary force of the daily sea breeze, and from the coast fogs, while giving to them a remarkably equable temperature by day and by night. To live upon one of them is like taking a long sea voyage in the semi-tropics, without the attendant discomfort and sickness; while at any time a person is within a few hours sail of the mainland, and the port of the southern transcontinental system of railroads.

I cannot give tables of temperatures, as no regular observations have been taken upon the islands, but the following, from the United States Signal Service at Los Angeles and San Diego, will give the grounds for forming an estimate:

MONTHLY MEANS OF TEMPERATURE.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.
Los Angeles.	71°.1	70°.1	69°.8	63°.4	62°.1	55°.3	54°.1	54°.6	55°.8	58°.0	62°.0	64°.7
San Diego__	68°.9	68°.5	67°.9	63°.6	60°.1	56°.2	55°.0	55°.5	56°.3	58°.2	61°.6	64°.2

Average maximum and minimum daily variation for July at Los Angeles, twenty-one degrees; San Diego and San Pedro, eleven degrees.

It will thus be seen that the monthly variation is less at San Diego, directly upon the coast, than at Los Angeles, which lies sixteen miles back from the sea. It will also be seen that the daily variation of temperature of twenty-one degrees for July, at Los Angeles, drops down to eleven degrees at San Diego and San Pedro, immediately upon the coast. The variations upon these comparatively small islands, out from twenty-five to fifty miles from the main land, and surrounded by the equable temperature of the ocean waters, would certainly be, to a notable degree, still less; and such is the statement of all persons who have spent much time upon them.

SANITATION IN SCHOOLS.

By C. W. Breyfogle, A. M., M. D., San José, Member of the State Board of Health.

We have good reason for boasting of the general advancement made in sanitation in the past decade; but it is surprising how little of sanitary research has been applied to the proper construction of school houses. The standard works on sanitary science either totally neglect the subject, or devote a very few pages to curt, and in the main impractical, directions. Standard works on education are found to be still more negligent, and where any mention is made of the subject it is usually in the nature of a few worn out platitudes. The result of all this is seen to-day in faulty teaching, objectionable sites and badly constructed buildings, and in physically deformed men and women, with deformed minds, because they exhibit simply a brilliant cramming, instead of healthy intelligence. There must be a sound physical, or there cannot be a sound mental. They are equally and unitedly necessary to success. Either the educators of our State must be taught sanitation, or there must be some authoritative and frequent examination of our buildings, and grounds, and teaching—an authority sufficient to demand and enforce changes in existing objectionable features, and whose approval must be obtained before the erection of new buildings. It needs but an examination of our present system to demonstrate that such authority, properly used, would save the children of our State from untold evils from which they are now suffering.

It is impossible, in the brief limits of this paper, to give more than a few general hints. My object is simply to call the attention of the public to the general want. First, a few of the errors, now existing, which have come under my personal observation: I have seen an experienced teacher, principal of a large city school, exercise her class (aged from seven to ten years) in calisthenics as soon as they had re-assembled after their noon luncheon. I have seen children compelled to go from an over-warm school room to the open, rainy atmosphere, because, forsooth, it looks well to have them march from the play-ground to their rooms, keeping step to the music of the piano. I have seen girls, at the age of puberty, marching to the same music slowly up a long flight of stairs. I have seen fifty pupils, from six to seven years of age, ranged in a row upon one side of a room, the light glistening and scintillating upon a blackboard thirty feet distant, which was covered with small figures crowded together, while the little ones turned themselves this way and that, in order to read the figures, the walls above and around being brilliant, dazzling white. I have seen the dress and eyes of little pupils full of dust from chalk crayons used upon rough blackboards, when it is full as easy, and as cheap, to have the boards smooth, so that they cause no dust. Stooping shoulders, from too low desks or seats too high, so that there is no support for the feet; spinal deformities, from errors of position in studying; affections of the brain, from too close proximity to a heated stove; catarrhal affections, from draughts or cold extremities, are a few of the faults daily coming within the cognizance of the physician. The reason for the existence of such palpable evils is found in ignorance, pure carelessness, and false economy. The remedy is in the exercise of simple common sense, treating the children at school as we would treat them at home, and the more thorough enlightenment of teachers and Boards of Education upon sanitation, health and hygiene.

The question of light, heat, ventilation, and exercise are of course of paramount importance. By my request, Dr. H. C. French, Oculist and Aurist, of San Francisco, has tested the eyes of four hundred pupils in the public schools, and the result gives such positive evidence of constant, and in many cases permanent, injury, that it is virtually a condemnation of the whole school system. The investigation will be prosecuted still farther, and the result made known at the proper time. I will give, briefly, the conclusions at which he arrives at this stage of the investigation, regretting that they must be at all condensed. The light should be admitted from such portion of the room as will allow it to be behind the pupils, and it should be sufficient to equally and abundantly illuminate the whole room. The ceilings and walls should be tinted some neutral color (never plain white), and the blackboards should be dark green instead of black. If the light be admitted from the rear of the scholars, it will necessarily be in the face of the teacher. Still, of two evils he chooses the least; but, wherever practicable, he advises that the room be lighted from the roof, thus furnishing a steady light through all the room, and from the best possible direction. This involves a one-story building, and is therefore impractical in our large cities except for the upper story. The best substitute would be a longer and narrower room, lighted from one side only, the pupils sitting with their backs to the light. In the four hundred pupils examined, there was found such a remarkable percentage of amblyopia, asthenopia, myopia, and other kindred diseases, as to lead to the undoubted conclusion that these affections were the direct result of our present school system.

Without considering the various theories of ventilation (however important they may be to a full understanding of the wants of our public schools), I would simply give a few plain requirements and practical suggestions. The ceilings of the rooms should have a minimum height of twelve feet, and a maximum of fifteen feet. Nine square feet of floor space should be allowed for every scholar; and equally important is it that two hundred and fifty cubic feet space be the minimum allowance for each. The usual allowance is not more than one hundred and ten, where it should be three hundred. One thousand cubic feet of fresh air being required for each pupil every hour, the means of procuring the fresh air and emitting the foul constitute one of the most important elements in construction. In our climate, I think the best plan would be as follows: Let each school-room be supplied with that very necessary adjunct, a small ante-room, for supplies, etc., and made either as a projection in each outside wall of the building, or at the outside corners. In this room let the wainscotting extend five or six feet high. Let the space of twelve inches above the wainscotting be open freely to the outside air, being covered simply upon the inside with porous cloth, thus admitting an abundant supply of fresh air at a sufficient height from the ground to avoid malarial exhalations, while the porous cloth, the height from the floor, and the small supply-room prevent dangerous drafts upon the scholars. For the exit of the foul air, ventilation at the top of the walls near the ceiling, is necessary for all buildings of more than one story. In one-story buildings, and in the upper story of others, it should be accomplished as follows: Let a galvanized iron pipe, thirty to thirty-six inches in diameter, pass from the center of the ceiling directly through the roof and a few feet above; the lower end to be flush with the ceiling, and furnished with a graduator for opening and closing it. Through the center of this pipe let the stovepipe ascend, rising a few feet higher, both pipes being furnished with proper caps. The larger pipe will give ample exit for the vitiated air, aided by the hot stovepipe, while the danger from fires through defective flues is entirely obviated.

In our State, the heating of the school-room is a problem less difficult to solve than in colder climates, and I need not dwell upon it.

Too little attention is given to exercise upon the play-ground. If some system were adopted in which the teacher would take a leading part, much could be done to relieve the tedium of school hours, and impart a healthy stimulus to study. The Germans are fond of athletic exercise, and it comes from systematic training in gymnastics in their schools. The English games show a nation's pluck; while, as Professor Swett aptly suggests, the recreation of Americans is *business.* For the boys, there should be on every school ground the horizontal bars, jumping board, swings, and ladders; inexpensive, and paying an immense interest upon the investment. For girls, the light dumb bells and the wands, costing but a trifle.

The sewerage, water supply, and drainage, should be more carefully regarded even than in the construction of dwellings. It would be well often if the physician, while searching in vain for the cause of diphtheria in the sewerage of the house, would look at that of the school his patient attends. It is a sad but, alas, almost universal mistake to conclude that because children are in school but a few hours, and that during the day, no attention need be given to sewerage. How long does it take exposure to infuse the poison of terrible disease?

The site of the school-house is important. Clayey soil with its chilly dampness is a frightful source of ill-health. Made ground, the original low, swampy, or an old watercourse, and perhaps the filling of garbage *et id omne genus,* is prolific of death, or at most large doctor's bills. Building a fine school-house, then grading and filling the grounds, without proper careful under-drainage, simply makes a cess-pool of the cellar, a factory for generating poison for the atmosphere above. Let the daily resort of our children be placed upon a gravelly, sandy or loamy soil, and then protect it still further by that thorough under-drainage which, though a little expensive at first, is so profitable in health and cheerfulness.

While these are the general features of this great question, there remain others very important and necessarily associated. These should be constantly before the mind of the teacher, and frequent occasions will occur when much good to the scholars, to the men and women of the future may be founded. Under this head I would mention instruction in the position of the body, the care of the person, the diet, having the clothing loose, general cleanliness, neatness and economy. Care too should be taken that the pupils be not urged too rapidly, or promoted until able to maintain themselves in the higher grade, and hence that their studies at home be guarded. Children under the average age of twelve should have no home study. Those from twelve to fourteen not more than one. Girls from fourteen to sixteen not more than one hour.

Lastly, let me urge one more essential to perfect sanitation, and one universally disregarded as far as I am informed. The model Board of Education may provide the model school-house, one story, lighted from the roof, tinted walls and black-boards, heat, ventilation and sanitary surroundings perfect, play-grounds cheerful and furnished with everything that will combine amusement and profit. When this is done they may employ a teacher who will antidote it all, while the scholars show dullness, gloom and discouragement. The modern educator and the modern physician are more and more impressed with the necessity of having a sound body *and* mind, equally adjusted, evenly balanced, if we would reach the perfection of mental attainment. Let then the last essential of perfect sanitation be the well drained (I beg pardon?) the well trained teacher, whose bright and cheerful looks and greeting, whose mild but firm discipline, whose interest in their childish sports as well as their studies, and whose contagious enthusiasm leads them to the perfection of *mental sanitation* as the grand culmination of all.

THE POLLUTION OF RIVERS.

By F. W. Hatch, A. M., M. D.

Pure water is a necessity of life. It is essential not less to the happiness than to the health of the people; and yet it is one of the things most difficult to obtain. The use of impure water is now generally recognized as a common cause of disease, and to no other single agent, or combination of agents, are to be more generally attributed those sudden outbreaks of disease by which communities are sometimes afflicted. No other fact in sanitary science is more firmly settled than that of the connection between impure water and disease.

The State was doubtless impressed with this belief when, in 1876, Section 374 of the Penal Code became a law. It reads as follows:

> Every person who puts the carcass of any dead animal, or the offal of any slaughter pen, corral, or butcher shop into any river, creek, pond, reservoir, stream, street, alley, public highway, or road in common use, or who attempts to destroy the same by fire within one fourth of a mile of any city, town, or village, and every person who puts the carcass of any animal, or any offal of any kind, in or upon the borders of any stream, pond, lake, or reservoir from which water is drawn for the supply of the inhabitants of any city, city and county, or any town in this State so that the drainage from such carcass or offal may be taken up by or in such stream, pond, lake, or reservoir, or who allows the carcass of any dead animal, or any offal of any kind, to remain in or upon the borders of any such stream, pond, lake, or reservoir within the boundaries of any lands owned or occupied by him, or who keeps any horses, mules, cattle, swine, sheep, or live stock of any kind, penned, corraled, or housed on, over, or on the borders of any such stream, pond, lake, or reservoir, so that the waters thereof shall become polluted by reason thereof, is guilty of a misdemeanor, and upon conviction thereof shall be punished as prescribed in Section 377 of this Code.

It is a matter of common observation that this law is not observed. It is violated almost daily in the City of Sacramento by Chinamen living along the border of the "slough," and by others. It is violated there by citizens resident upon the streets and alleys, but who manage to escape detection. It is notorious that the sewage from towns situated along the banks of our principal rivers—notably the Sacramento—has been emptied or permitted to flow therein at all seasons of the year; that the refuse from dwellings, and sometimes from pigpens, stables and privies, has been discharged therein, with the full knowledge on the part of property-owners and the authorities that this water forms the principal or only source of supply for nearly thirty thousand people living below them.

Nor, looking especially at the Sacramento River, are these the only sources of defilement. The Feather River adds its quota from settlements but a few miles above its junction with the Sacramento; and, as if to fill up the measure of the misfortune of those compelled to use this water, the American pours its stream of filth from settlements along its banks, and from five hundred or six hundred human beings inclosed within the walls of the State Prison at Folsom.

The disposal of the sewage of towns, or of large public institutions, is beset with difficulties, and the easiest solution of the problem—the most natural place of discharge for towns built upon the bank of a river, is the river itself. It saves much inconvenience and expense; it affords the speediest and most effectual method of getting rid of that which all desire to have removed as far from them as possible; and, too commonly, but little concern is manifested whether it is destined to become the daily supply of others, or whether those who drink it are satisfied or not.

Fortunately for Sacramento, with its twenty-three thousand population, this filth comes to us in a form so diluted as to be no longer detectable by or obnoxious to the senses, however revolting it may be to the imagination.

The plea of convenience is, in fact, the only argument by which the practice spoken of has been sought to be maintained.

But, it is said that the law quoted does not apply to the discharge of sewage into the rivers, and the writer has been informed of legal opinions to that effect. If this be true, if such opinions are tenable, let the law be amended; let it be made ample enough in its scope to reach the chief of all nuisances which such a law can possibly include; let it be made so plain that no ingenuity can wrest it from its legitimate purposes, so clear that "the wayfaring man, though a fool," may not be deceived.

Towns along the river may then find it within their power to adopt other methods for the disposal of sewage, and the State itself will be able, with the facilities at its command, to overcome the apparent difficulties which, doubtless, led to the existing arrangements at the Branch State Prison. It is understood that the attention of the authorities at the latter, has already been directed to the subject.

The question of the contamination of streams by sewage, and of the different measures proposed for the disposal of this troublesome agent, was fully discussed in the report of the State Board of Health for 1877–9. It was there shown that, according to the best authorities, while running streams do have the power, to a slight extent, to oxidize the sewage with which they have been contaminated, this oxidation takes place so slowly, and so inconsiderably, as to be almost inappreciable by chemical tests, and that, to use the emphatic language of the English Commission, composed of men especially fitted to pursue such an investigation, it is impossible to say how far such water must continue to flow before the sewage it contains becomes thoroughly oxidized. It was further shown that the apparent innocuousness of such water is mainly due to the conservative agency of dilution; that the greater the dilution, the less the danger; and that water containing even an excess of what is commonly considered to be a safe amount of sewage may often be used with impunity, until "upon the outbreak of an epidemic of typhoid fever or of cholera, its presence is made known by fearful demonstrations of fatality."

Admitting these facts, which are believed to be incontestable, the question instinctively forces itself upon the mind as to the position in which the population of Sacramento would be placed should an epidemic of one of these diseases appear at the State Prison at Folsom, only twenty-two or twenty-three miles distant, or at Marysville, sixty miles above us.

The question of the disposal of sewage involves many difficulties. The various methods proposed for the purpose were considered in the report above referred to, and the objections to each, as compared with the discharge into the sea or other large bodies of water, not used for drinking purposes, or below the point where it may be hurtful, pointed out. But, as the latter is often impracticable, it is often necessary to resort to other methods, the important problem being, how to reconcile effectiveness in the result with economy in expenditure.

The objections there urged were to the adoption of some of these methods for towns; they apply less forcibly to isolated dwellings or institutions.

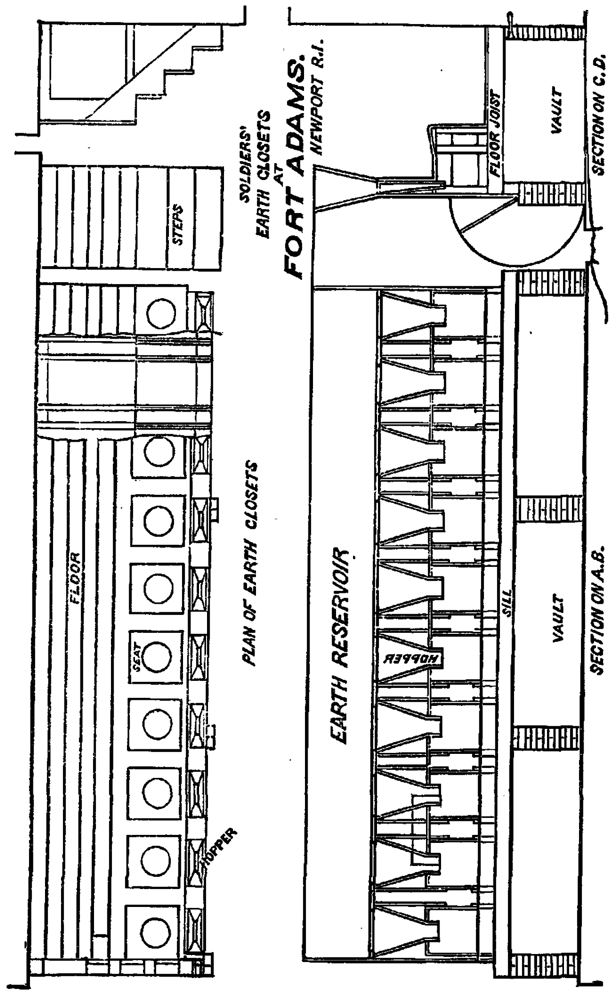
It is not designed to review these various plans at this time; they must necessarily vary with the amount and character of the sewage to be disposed of, the water supply, the topography of the place, the geological character of the soil, the rainfall, and other circumstances. Viewing the subject as applicable solely to the Branch State Prison at Folsom, it would seem that the conditions are eminently favorable to the success of the dry earth system as proposed by Moule, or as designated by Mr. Waring, Civil Engineer, the "Dry Conservatory System." These conditions are, substantially, a simple closet for each cell, an abundant supply of earth of the right kind, or of ashes, and regular and systematic inspection and removal; or, instead of having a receptacle in each cell, a series of closets might be constructed, as is already done at the prison, under the water-carriage system, like those, for example, in use at the garrison, at Newport, Rhode Island (Fort Adams), and which are shown in the accompanying plan, taken from the excellent work of Mr. Waring. The deposits are received on the concreted floor of the casemate in which the closets are placed. Such closets, arranged with divisions between the seats, Mr. Waring says, are well adapted for the use of schools, asylums, etc.

The vicinity of the prison is capable of affording an almost inexhaustible supply of suitable earth, sufficiently dry for the greater part of the year, and for the remainder, readily prepared for use by the labor and other facilities obtainable there. The ashes of the establishment, of which there must be a large quantity, could be also economically utilized.

The advantages of the "Dry Earth" plan depend upon the deodorizing, disinfecting, and absorbing properties of the earth. Not all kinds of earth are suitable; it must be dry, it should contain alumina or iron, or be "powdery to give it sufficient absorbing power;" it should be free from sand or gravel, and the arrangement of the closet should be such that a sufficient quantity of earth will be, with certainty, deposited upon the foecal discharge—enough to cover it and to absorb the urine.

But, though the dry earth thus used is an efficient deodorizer, it is essential that the accumulations should be promptly removed. The success of the plan depends entirely upon the regular and systematic manner in which the deodorization and removal of the compound are effected. In a public institution this can be controlled—the necessary supervision is easily obtained. For such institutions the above plan has been particularly recommended by almost all sanitarians, wherever the discharge of sewage cannot be made into a river, or when such a disposition of it would be likely to result in injury to others.

The quantity of earth required is usually estimated at from one and a quarter to one and a half pounds per head per diem. With five hundred persons at the prison, there would be consumed, say, seven hundred and fifty pounds of earth. Estimating a cubic yard of such earth to weigh 3,240 pounds, it would take 273,750 pounds per year. An acre of ground denuded to the depth of one foot would yield 2,420 cubic yards. The problem may be stated thus: Five hundred men require, at the rate of one and a half pounds for each man, seven hundred and fifty pounds of earth per day, or 273,750 pounds per year; or one acre denuded to the depth of eighteen inches would supply earth for five hundred men—one and a half pounds per day per man—for twenty-eight years.



The resources of the location are ample. They appear to be practicably limitless. But, in practice, it is ascertained that the same earth, when dried, may be used over and over again, and, in fact, this is done when it is considered desirable to increase the fertilizing properties of the earth for commercial purposes. Indeed, when the market value of the material has been a prominent consideration it has been customary to charge it from two to five times.

"In 1874, Mr. Netten Radcliffe alone made an examination of the privy system generally, and again inquired into the condition of the earth system. * * * After this wide observation, he says, without qualification: 'As a means of abating excrement nuisances, the dry earth system is of the utmost value.' And again: 'Of the value of dry earth as a means of abating the excrement nuisance, no question, I presume, now exists; and its application in detail to this purpose has been facilitated to the utmost by the ingenious mechanical arrangements devised and patented by Mr. Moule. * * * The arrangements, which provide for proper charges of dry earth being thrown upon the deposited excrement, admit of ready adoption of the system in houses, schools, and other institutions.'"

William H. Ford, in "Buck's Hygiene and Public Health," says: "The dry method is an exceedingly convenient, economical, and efficient means of excrement removal where water-closets cannot be used. For country houses, villages, small towns, and, under certain circumstances, for schools, prisons, and charitable institutions, this arrangement is certainly a most desirable one."

Dr. Voelcker, Chemist to the Royal Agricultural Society of England, says: "Nothing effects so complete and rapid a deodorization and disinfection of putrid animal matter of every kind, as a well aerated soil. * * * Mr. Moule has the merit of having given to the public a simple and ingeniously contrived apparatus, which is capable of doing good service in many places; more especially in sick rooms, public establishments, such as county prisons and unions, and country houses, where a good supply of water cannot be commanded; and credit is due to him for having pointed out the repeated action, and consequently the fitness for repeated use, of the same earth." All that is necessary in the preparation of the earth for repeated use, is that it be spread under a roofed shed and dried.

The plan proposed is not recommended on account of any advantage it possesses over the water carriage system; for it, or any other substitute, is far inferior in a sanitary point of view. It is advised solely on account of the danger likely to occur from the continued use of the latter under the circumstances existing at the prison. For the disposal of the solid excreta at the prison, the earth system has advantages by way of a certain pecuniary return, and although it might not, as an independent investment, prove profitable, the product has a certain market value, which would, possibly, go far towards defraying the expenses. A pretty extensive and intelligent farmer, not many miles from Folsom, stated, in conversation the other day, that the farming lands in his neighborhood would soon suffer in consequence of the constant drain upon them by successive crops; that the scarcity of manure was now, and would become, more and more seriously felt; and that, in the absence of stable manure, the use of guano, or some other fertilizer, would soon become a necessity. The material derived from the dry earth system could be used to supply this want. After proper admixture, it might be stored away in barrels or sacks under shelter, and disposed of to those needing it. It is inoffensive, and may be kept, in a dry state, for an indefinite period. By its use, the productive capacity of many farms within easy access, now weakened by continuous crops, might be restored, and acres now idle and unproductive, might be brought under successful cultivation.

In this scheme of partial remuneration for the expense and trouble attendant upon the plan proposed, there is nothing vissionary. It has been tried under far greater difficulties, and though it is probable, as just stated, that the manufacture of poudrette would not be profitable, as an independent investment, the circumstances under which it would be conducted at the prison would give it many advantages over private enterprise. But the fact, whether or not profitable, if the proposed disposition of the excretal discharges of the prisoners be accepted as wise and judicious as a sanitary measure, should not be made a controlling motive. The State has a duty to perform in this matter, which is above and beyond all pecuniary considerations. The question is, whether the sewage of the prison shall be permitted to flow into the Sacramento River, to pollute the water consumed by the people of the Capital of the State, exposing them to the great risk, even if not to the certainty, of injury. This should be avoided at any cost. The plan recommended has been selected over other plans, because it can easily be made efficient by a small expenditure. It is better adapted for the special purpose in view—the disposal of the solid matter—than the irrigation, or any form of the filtration systems. The cesspool system is a nuisance under any circumstances, and should be tolerated only as a necessity, where other more rational methods are impracticable.

The purification or precipitation processes seem to be inapplicable to the situation at the prison, at least, so far as concerns the solid excreta. They are expensive, and, even if successfully carried out, would still leave the sewage unfit for discharge into a stream so soon to be mingled with the drinking water of a large population. It is estimated by Frankland, that the amount of the bowel and kidney excreta, which alone we are now considering, reaches daily, in adults, three ounces of fœces and forty ounces of urine (by measure). If the weight of urine were equal to that of water, which is not commonly the case, there would be discharged from a prison of five hundred inmates, 93.12 pounds of solid and twelve hundred and fifty pounds of liquid excreta daily, or nearly eleven and a half tons of the one and over two hundred and twenty tons of the other per annum.

The question arises: Is the conservative influence of dilution sufficient to render this amount of filth innocuous?

So much for the excreta, solid and liquid.

But there is another kind of sewage to be provided for. There is the refuse from the kitchen, and the baths, and house water of all kinds, containing a greater or less quantity of dissolved or suspended animal and vegetable matter, ready to decay. The admission of the sewage water into the river can, in no sense, be justified, unless it be previously purified by some one of the processes devised for the purpose. Some of these have already been alluded to. There is the "Precipitation Process," either by natural subsidence of the suspended matters in tanks, or by purification by lime, or alumina, or phosphate of magnesia, or by various compounds in which the above with clay, zinc, blood, charcoal or perchloride of iron, more or less enters. The product obtained by any of these processes is collected and dried, and the liquid is permitted to pass into the stream, or may be used for irrigation.

The question proposed by Dr. Parkes is a pertinent one: "When the sewer water is cleared by any of these processes, is it fit to be discharged into streams? In the opinion of some authorities, if the precipitation is a good one, it may be so, and it appears certain that in many cases it is a tolerably pure water. * * * But it still contains in all cases some organic matter, as well as ammonia, potash, or phosphoric acid. It has, therefore, fertilizing powers certainly, and possibly it has also injurious powers. No proof of this has been given, but also no disproof at present, and when we consider how small the agencies of the specific diseases are, and how likely it is that they remain suspended, we do not seem to be in a position to expect that the water, after the subsidence of the deposit, will be safe to drink. We must adopt, I believe, the plan which is safest for the community, and the effluent water should, therefore, be used for irrigation, or be filtered before discharged."

This brings us to the Filtration plan, or the mechanical separation of the liquid from the undissolved particles of the sewage by passing through a body of porous earth, sand, gravel, or other filtering medium.

The action is not only mechanical but also chemical, oxidation of the organic matters taking place by virtue of the air contained in the earth or other material used; this organic matter being thus converted into carbonic acid, water, and nitric acid. When the filtering material is sufficiently great, and the sewage has been previously deprived of its coarser particles by screening, the filtering process, properly conducted, is thought to render the water sufficiently pure to be admitted into a stream. The conditions necessary are: a porous soil—better if it contain oxide of iron and alumina—an effluent drain not less than six feet from the surface; an inclination of the ground suitable to allow the sewage to flow over its entire surface, and a division of the filtering area into four equal parts, each part to receive the sewage for six hours, and allowing an interval of eighteen hours before it is used again. It is considered that an acre of land thus divided would dispose of about 100,000 gallons of sewage daily. According to Dr. Parks the filtering area should not be less than one cubic yard for eight gallons of sewage daily—twenty-four hours.

Experiments made by the Rivers Pollution Commissioners (England) to test the value of the filtration process, show that when the above conditions are fulfilled, the whole of the sediment was removed, and that nitrates and nitrites, which did not exist before filtration, were found, thus showing the effectiveness of oxidation. It is desirable, for sanitary purposes, that crops should be planted on the land.

The only other plan for purifying liquid sewage so as to render it suitable for admission into a river, is some form of irrigation, or the passage of sewage over and through land with the view of bringing it speedily under the influence of plants.

Simple irrigation, or the discharge of sewage upon land unprepared for the purpose, and without deep underground drainage, has properly been abandoned. The present is really a combination of the *irrigation* with the *filtration* systems. The soil should be properly prepared for the purpose. Flat, or gently sloping land is the best.

This is to be laid out in broad ridges or furrows, the ridges having a gentle slope of about thirty feet wide, with a conduit on the summit or crest, along which the sewage is conveyed. When the channels are full, the sewage water overflows and runs gently down the slopes, and, being absorbed by the soil, is carried off into the water courses by drains five or six feet deep.

The effect of this process upon the sewer water is said to be, a mechanical arrest of suspended matters; an oxidation and consequent nitrification, due to the porosity and physical attraction of the soil, and chemical changes. "The sewer water," says Dr. Parks, "should reach the ground in as fresh a state as possible. It is usually run through coarse strainers to arrest any large substances which find their way into the sewers, and to keep back the grosser particles which form a scum over the land. It is then received into tanks, whence it is carried to the land by gravitation, or is pumped up. The carriers of the water are either simple trenches in the ground, or brick culverts, or concreted channels, and by means of simple dams or gates the water is directed into one or the other channel as may be required."

The amount of sewage that can be disposed of by this means will depend upon the porosity of the soil, and the rain-fall. According to the best authorities, the amount of land set apart for the purpose should not be less than one acre to each one hundred persons. This will take, upon the right kind of soil, 2,000 gallons in twenty-four hours. The land may be subdivided so as not to receive sewage two days in succession. If the object be to purify the sewage of its organic matters so as to render it fit to be introduced into a stream, the sewage is then applied to each subdivision alternately.

Mr. C. E. Waring highly recommends a system of sub-irrigation, which would seem to be well adapted to the situation at the prison. As originally proposed, it is described as follows:

> The house drainage is discharged into a tightly cemented tank, four feet deep and four feet in diameter, entering near its top, which is arched over and closed by a tightly fitting stone cap, and thoroughly ventilated. Its outlet pipe, starting from a point one foot below the surface of the water and about two feet below the cap-stone, passes out near the surface of the ground and is continued, by a cemented vitrified pipe, to a point about twenty-five feet further away; here it connects with a system of open-jointed drain tiles, consisting of one main, fifty feet long, and two lateral drains, six feet apart, and each about twenty feet long. These drains underlie a part of the lawn and are only about ten inches below the surface. During the growing season their course is very distinctly marked by the rank growth of grass over and near to them, the difference of growth in the immediate vicinity being so great that, were the work to be done over again, I should place the lines but three feet apart. The slope of the ground is very slight, probably not more than fifteen inches between the extreme ends of the system, yet, judging by the growth, the distribution is very uniform throughout all the pipes.
> * * * Successful though this experiment has been, I have recently adopted a small Field's Flush Tank, in the belief that the system would be improved by having the discharge intermittent, so that the flow of water, being more copious, should saturate the ground for a greater distance, and that, with considerable intervals during which there is no flow, there would be complete aeration of the ground. * * * The purpose of this apparatus is to prevent the constant trickling away of the small stream usually flowing from the houses, with too little movement to carry forward obstructing matters, such as are sure, sooner or later to clog any ordinary house drain. * * * From its intermittent action, also, it fills the ground for a short time, and then, as the liquid subsides, fresh atmospheric air enters the soil and assists, by its oxidizing action, in the work of purification.

This work of purification is very much aided by the vegetation growing upon the ground. Evidence was adduced before the French Horticultural Society to show that while water containing putrefying organic matter retains its putrescency if left to itself, it entirely loses the *bacteriæ* which accompany putrescence when subjected to the influence of growing plants, and contains only the larger *infusoriæ* common to good water. In five days the water acted upon by a living root lost all its bad smell, and became purified. Mr. Waring closes by saying:

> For how large a community the Denton and Field storage tank might be made useful we have as yet no experience to determine. All that can be said for it at the present time is, that, so far as private houses, factories, hotels, asylums, and small communities are concerned, it offers a means for the complete solution of the slop question in a manner that will give at least some return for the outlay, for in every case where this underground irrigation is used there is sure to be a greater or less increase of fertility.

The engine at the prison could easily be so arranged as to pump the liquid sewage of the institution to any desired point, whence it could be distributed through the flush tank to any part of the grounds. The plan would unite efficiency with economy, and greatly contribute to the productive capacity of the soil.

I have thus considered briefly, but with sufficient detail, I trust, to be understood, the various methods which have been devised for the disposal of sewage. The question has been divided, as it ought to be, into means for disposing of the solid or fœcal contents, and those which relate to the liquid sewage; and the conclusions arrived at have been such as the peculiar situation at the prison, the topography, the amount of sewage, the facilities for obtaining land of the proper kind, and cheap labor seemed to suggest. The question is one of importance, intimately concerning large populations compelled to use, indirectly at least, the water of the American river, and the duty of the State in relation thereto. If the investigations of sanitarians be of any value, if they have demonstrated anything conclusively, it is that water, polluted by just such sewage as now enters the Sacramento river at Folsom, is dangerous to health.

FACTORIES AS SANITARY AGENTS.

By J. P. WIDNEY, M. D., Member of the State Board of Health.

In almost every town and city is to be found a quarter of one especial topographical character noted for its unhealthfulness. This quarter is low, often boggy, and malarious. It is commonly at once to be picked out by the poor class of dwellings erected there, by the foul odors, and by the general air of neglect and dilapidation. Upon the city health reports it is marked as the ward which, in proportion to its population, suffers most from the ravages of diphtheria, scarlet fever, malarious and typhoid fevers, and foots up at the end of each month the largest proportionate death rate. The better classes of population avoid it. Only those whose limited means compel them, live in it. And so, year after year, while other portions of the city increase in wealth and population, this remains nearly at a standstill. The city grows around it until it becomes an eyesore in the heart of population, and a hotbed of disease, which constantly menaces the health of the surrounding districts. Yet it is often that part of a city which, by its level surface and contiguity to a water front, should be one of the most desirable for many purposes. Such a district is found in San Francisco, in the Mission Bay flats. A somewhat similar quarter existed ten years ago in Los Angeles. It was the triangle bounded by Alviso and Alameda Streets and the river. It was known among physicians as the fever district. It is a low river bottom, entirely of alluvial formation, and the sweep of the sea breeze was in a measure fenced off by rows of willow trees lining the roads and dividing the fields. About that time this property was thrown into the market, and portions of it sold out in town lots and built upon. The houses were mostly small one-story frames. Malarial fevers at once attacked the population of this quarter, not in any very fatal form, but so persistent, and recurring so constantly, that many persons abandoned their houses and moved away. The quarter gained so bad a reputation for healthfulness that property became unsalable, and so remained for several years, many of the houses already built standing tenantless. After this, however, factories began to locate upon these lands, drawn by their cheapness, the level grades, and nearness to the business portion of the town, and to the railroads. The city gas works were removed to lower Alviso Street; with fires going night and day, pouring out the smoke and fumes of tons of coal each twenty-four hours. Several large steam flour mills were erected, running with relays of men night and day. An iron foundry and several lumber mills began work. A large distillery was built just across the river. The steam pumping works of one of the city water systems were located in another portion of the tract, while the extensive workshops and station of the Southern Pacific Railroad occupied another, and the coming and going of many trains each day from the transcontinental, the Anaheim, the

Wilmington, and the Santa Monica roads, besides some half dozen locomotives standing much of the time, with fires going, upon side tracks, added to the gases and smoke which began to settle down over this unhealthy district.

The necessities of the workmen employed at these various factories compelled again the settling of population over the ground which had before been so fruitful of malarious diseases. Now, however, although there is absolutely no drainage for the district, everything having to seep into the sandy soil, malarial diseases are rapidly disappearing, and what used to be known as "the fever district," is losing its distinctive appellation. There has, it is true, been some cutting away of the willow hedges, but the planting of fruit and shade trees has probably kept even with the clearing process; so that this can hardly be considered a factor in the change which has come to the healthfulness of the locality. It can only be ascribed to one cause, the setting loose in the air, more especially at night, when the sea breeze has died away, leaving the atmosphere stagnant, of the smoke and gases of all these tons of coal daily consumed by the gas works, the factories, and the locomotives. As a result, land which, before, was almost worthless, has rapidly appreciated in value, and a central portion of the city area has been transformed from waste space to productive and valuable property. Neither does this district now stand as a constant menace to the health of the adjacent portion of the city.

The facts which I have given are not new. The same thing has been noticed at times in other cities. But now for the practical conclusions: Would it not be a wise thing for cities, by municipal legislation, and by the offer of especial inducements and privileges, to secure the location, in these malarious districts, of the factories, gas works, mineral and acid works, railroads, foundries, smelting works, and all the many industries which crowd into a city, and which, by fires or chemical process, turn loose in the air the smoke and gases of combustion or chemical action, and thus reclaim them, while at the same time freeing other portions of the city from the smoke and fumes which to them are a nuisance?

If the manufacturing industries of San Francisco could be located along the line of Mission Creek, the monthly report of the Health Officer would no doubt present a very different showing for that portion of the city.

THE SEASIDE HEALTH RESORTS OF CALIFORNIA.

By F. W. HATCH, A. M., M. D.

A good deal has been written at different times in the public press, and in the medical journals of this and other States, upon the sanitary advantages of some of the more or less popular health resorts of California, and the State Board of Health has added to these, from time to time, in its biennial reports, especially in their relation to consumption. The subject is an interesting one, and may not inappropriately form the subject of a more general report than has hitherto been attempted. It is a theme upon which much may be said—too much to be exhausted in a single paper; we can only hope to present a few facts, drawn mainly from personal observation, in relation to some of the more prominent places of resort of which the State contains so many. The consideration of this subject has been suggested in consequence of the numerous applications to the Secretary of the State Board of Health for specific information relating thereto. As an answer to these applications, no better method presents itself than a general review in the pages of the biennial reports of the Board.

There are some difficulties attending the investigation of this subject. The climatic features of different portions of the State are so distinct—the difference between the coast, valley, and mountain regions especially, are so well marked, and the influence of a prolonged residence upon the inhabitants of each must be so varied, that it is not easy to determine the particular locality which, resorted to by residents of our own State, for example, would be most desirable as a *change*. It is assumed that a change of climate, occasionally, is desirable for most persons; that the man of business, the eager, calculating merchant, the worn and weary speculator, the plodding professional man, need relaxation of mind and rest for the body; that our wives need relief for a time from the monotonous, and oftentimes irksome, demands of household duties, and the yet more exacting claims of social customs, and our children from the discipline and confinement of the school room; that the resident of the metropolis may profitably take refuge for a time from the fogs and mists which prevail there during the Summer; and the citizens of the valleys may with equal profit flee from the hot sun and, to many, the relaxing atmosphere of the interior. Nature seems to demand a change of some sort, and the physician is often asked, "Where shall I go?"

No reference is here made to any special disease, or to those who can be strictly called *patients;* but only to those seeking relief from the wear and tear of busy life, or the effects of certain local climates upon the general health.

But the subject has a much wider range of importance. The number of visitors to California is annually increasing. Many come for recreation and pleasure, to enjoy the genial climate, to view the gorgeous scenery of our mountains, to visit our watering places, or wander among the vineyards and orange groves of San Gabriel and Riverside. Many others visit us, as invalids, attracted by the sanitary advantages with which the State has been accredited, and the glowing pictures which enthusiastic pens have drawn of the almost marvelous curative virtues of our southern coast.

For this large class, information is needed—authentic information—to correct false impressions, and to guide them to a proper selection from the many really excellent sanitary resorts our State possesses.

Probably nothing has more injured the reputation of California as a health resort than the wild statements which have been made in relation thereto, the erroneous views which have been spread abroad, and the consequently injudicious selection by the invalid of a place of resort. This is especially true as regards our watering places and mineral springs, to which the invalid has often been directed by unwise counsels, and from which not only has no benefit resulted but, sometimes, positive injury.

For the purpose of the present report, only that portion of the State lying along the coast can be properly considered. Opportunity offering, other climatic divisions of the State will receive attention at another time.

In pursuance of this plan, it is proposed to review the principal watering places and health resorts lying south of San Francisco.

Northerly, the objectionable climatic features—the winds and mists—which, during the Summer months especially, render that city objectionable as a home for the invalid, particularly the phthisically inclined, prevail, for the most part, to an even greater degree. A few isolated localities, as a portion of the region about Bolinas Bay, and at Olema, may be considered exceptions. The latter is, however, several miles in the interior, and it may be remarked, in passing, presents a pleasant retreat, sufficiently exempt from the winds prevalent nearer the coast, and protected, in great measure, from fogs, where the invalid may, at the proper season, find a pure air and healthful exercise and enjoyment with rod and gun. The writer, when recovering, some years since, from a severe attack of pneumonia, found substantial benefit from its agreeable and invigorating climate.

South of San Francisco are many points of interest to the valetudinarian. Passing by Pescadero and other places having a local reputation, we have the well-known watering places of Santa Cruz, Monterey, and Santa Monica, and the popular health resorts of Santa Barbara and San Diego.

There is something in common in the climatic features of each of these places, though differing materially in the extent to which they are manifested. The winds from the ocean which prevail at San Francisco from April to October, are felt along the coast even as far as San Diego, though modified, as we proceed southerly, by local causes. At Santa Cruz, for example, the winds from the northwest are shut out, to some extent, by the wooded mountains on the north of the Bay, and, as explained by Dr. C. L. Anderson of that city, modified by a counter land current or eddy which, warmed by the the land or sun, usually possesses a mild temperature.

Monterey, (town) situated on the southerly side of the Bay, likewise presents a marked and agreeable contrast from what is observed at San Francisco.

Passing southerly, or rather southeasterly, to Santa Barbara, further and more decided modifications are noticed. "The number of foggy days may be said, as a general rule, to become less subject to slight local deviations. The severity of the summer winds is markedly subdued, the temperature somewhat higher and more equable, the rainy season shorter, and the rainfall less abundant, and intervening between these two seasons of Winter and Summer, a short season representing Spring, which becomes more and more attractive, inviting by the mildness of its temperature, the purity of its atmosphere, the early freshness and beauty of its vegetation, and combining all those qualities which have given to this region its popular reputation as a resort for health." *

Four hundred and eighty two miles below San Francisco, we reach the southern limit of the district under review, at San Diego, where, in addition to the modifying influences already spoken of as applicable to Santa Barbara, we have others arising out of the topography of the town and its harbor. Northwesterly winds prevail at the usual season as at other points, but they are materially tempered, and only exceptionably disagreeable.

In considering more closely these different resorts of the coast region, we find, at Santa Cruz, one of the most popular watering places of the State. As already observed, the prevailing winds along the coast are from the northwest, but they are more or less varied, both in force and direction, by local causes. From the meteorological observations taken by Rev. Mr. Willey, in 1874, we find, during the season from April to October—214 days—a northerly wind—north-northwest, or northeast, at 7 A. M., during 31 days; at 2 P. M., 24 days; at 9 P. M., 38 days, and a southerly wind at each of these hours—175, 165, and 177 days respectively.

The following table will serve to illustrate the temperature and humidity of the place for the same year:

Mean Temperature and Humidity at Santa Cruz, 1874.

MONTHS—1874.	MEAN TEMPERATURE.			MEAN REL. HUMIDITY.		
	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.
January	--------	--------	--------	--------	--------	--------
February	49°.5	55°.7	55°.3	76°	81°	87°
March	52°.6	57°.2	55°.4	80°	87°	100°
April	58°.3	64°.06	62°.9	82°	77°	72°
May	62°.1	67°.7	64°.5	77°	79°	83°
June	63°.6	67°.7	66°.6	78°	89°	84°
July	63°.3	70°.5	66°.2	78°	80°	79°
August	62°.2	71°.8	66°.6	88°	80°	84°
September	61°.3	70°.2	65°.1	82°	80°	84°
October	56°.5	59°.6	56°.2	81°	94°	75°
November	61°.0	64°.2	63°.0	82°	83°	78°
December	48°.1	55°.1	50°.2	85°	68°	80°

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* Report State Board of Health of California; Article, Relations of Climate to Consumption—1877-9.

As compared with San Francisco, the mean temperature for February is 1°.5 higher; for March, 1°.0 higher; for April, 5°.9 higher; for May, 9°.8 higher; for June, 7°.7 higher; for July, 8°.6 higher; for August, 11°.5 higher; for September, 16°.4 higher; for October, 0°.6 lower; November, 5°.7 higher; and for December, 1°.4 lower. Some allowance should be made for the fact that the observations at San Francisco were taken in 1876, and those for Santa Cruz in 1874. The difference in the climates of these two places is more prominently observed, however, in the relative force of the winds and the frequency of fogs or mists.

Aside from the agreeable change from San Francisco, on the one hand, and the heated atmosphere of the interior, on the other, which annually draws many from these sections, the chief attraction of Santa Cruz consists in the facilities it affords for sea-bathing. For this purpose it has been more generally known and resorted to than any other locality, and the popularity it has attained is merited, not less by its agreeable, bracing air, than by the excellent accommodations it affords for visitors, and its facilities for access by two railroads.

A new and superior water supply for the city has recently been obtained from Major Cree, in the Coast Range Mountains, clear, sweet, soft, and abundant. It is far preferable to the former water obtained from San Lorenzo River. Running through deep cañons, it is not subject to pollution in its course. Viewed strictly in a sanitary point of view, it is as a *watering place* that Santa Cruz is to be considered, yet its advantages in this respect cannot be separated from that of the sea air. Its effect upon disease is to be represented by both of these influences. In fact, it is a serious, though not yet quite settled question, whether the physical and therapeutical effects observed in those who resort to our seaside watering places, are not to be ascribed to the properties of the sea air, the character of which has been so well described by Braun as consisting of "the powerful stimulation of the change of substance, both retrogressive and formative, expressed in the striking increase of urea and decrease of uric acid and phosphoric acid in the urine, in the greatly increased requirement of food, and in the rapid and considerable increase in the weight of the body." In other words, it exercises an invigorating and bracing effect.

As compared with air of the interior, sea air is lower in temperature and more equable than the former; the Summer heat and the Winter cold are alike less intense; in consequence of the constant evaporation going from the surface of so immense a body of water, the absolute moisture of sea air is greater; it is more pure and free from organic matter, in consequence mainly of the air currents which prevail; it contains more ozone; less carbonic acid, though the difference is inconsiderable; its chloride of sodium, or common salt, mildly excites the respiratory membrane, thus, in connection with its increased moisture, giving it a salutary effect on many bronchial diseases and cases characterized by defective nutrition.

But while it is true that the effects of a visit to the seaside are to be ascribed, in a very essential part, to the sea air, those of which sea-bathing is productive are not to be lost sight of. These effects can only be considered in a general way. They are not unlike those of an ordinary cold bath, except as modified by the stimulating and exciting character of the water, and its constant agitation—the impulse of the waves and the surf. Its effects are different, too, according to the temperature of the water, and the duration of the bath. The temperature of the skin and blood are at first lowered. The skin exhibits the influence of the shock by the contraction of its muscular fibres, its pallor, its altered sensibility; the pulse and respiration are at first reduced in frequency, but soon become quickened; the central organs of the nervous system exhibits its effect by tremor of the limbs, or by lassitude and numbness, and the lungs by a certain amount of embarrassment, or oppression of the chest, or even gasping for breath. Then follows the reaction; the temperature rises; the skin relaxes and its sensibility is restored; the respiration is relieved and the bather breathes freer, and the organic functions are stimulated to renewed activity. In general, the colder the water the more active the reaction.

But beside these, the ordinary effects of the cold bath, the mechanical influence of the chlorides contained in sea water is not to be disregarded. The circumstances attending the bath, too, are different. Sea bathing involves a certain amount of exercise in walking to the beach, some excitement to the nervous system as well as some muscular exertion in struggling with the waves, or in swimming. The water is largely impregnated with salts, increasing its density, and, as just observed, rendering it stimulating and exciting to the skin, and this stimulation is increased and prolonged by the saline deposit left upon the surface, and the subsequent friction. The late Dr. Bell, who ascribed considerable influence to this latter consideration, remarks: "That such deposit is really formed on the skin, any one may easily satisfy himself by applying the tongue to any part of the surface, even after several days have elapsed from the last time of bathing." Sea bathing presents, therefore, a more complex problem for consideration than the ordinary cold bath. It is a positive agent, capable of doing harm as well as good, and should not be resorted to carelessly or indiscriminately.

The temperature of the water at Santa Cruz, during the bathing season, is lower than that at some other watering places. Observations taken by Rev. Mr. Willey, referred to in a report of the State Board of Health, 1877, show the temperature to have been, in June, 58°.2; July, 60°.4: August, 60°.2; and September, 60°. These observations were taken were taken at eleven o'clock, A. M. There would be a difference in the temperature at full and ebb tide—the state of the tide is not stated. On the coast of England, the temperature of the sea is said to average, during the Summer months, 63°, and at times, to reach 70°. The Summer temperature of the Mediterranean is given at 72°.5 to 80°.6; that of the Bay of Biscay, 73°.4; of the German Ocean, 60°.8 to 68°. Bell states that he found the temperature of the ocean at Newport, Rhode Island, in the early part of the month of August, to be 77° Fah. at eleven o'clock A. M.

Reliable figures of the temperature of the ocean at the principal watering places of the United States, are not available, although observations made by Captain R. J. Edwards, on the Atlantic coast, near Newport, reports for June, 61°.7; July, 69°.8; August, 70°.4; and September, 65°.3. This would give an average for the season of 66°.7 for Newport, and 59°.9 for Santa Cruz.

From the same source (Rev. Mr. Willey) we have obtained a record of the *air temperature* at Santa Cruz, taken at the same time and place, showing 60°.2 for June, 61°.8 for July, 63° for August, and 61°.3 for September; the average being 61°.7, or 2° higher than the water. This is favorable for the comfort of sea-bathing. Yet it is evident that with a somewhat higher temperature the ocean at Santa Cruz would be available for a much larger and more varied class of invalid bathers than it now is. As a matter of fact, it is probable that the popular season for sea-bathing there may be said to be from July to September inclusive, and the temperature of the water then averages 60°.2. This would place it within the lowest limits fixed by Braun, 59° to 66°.2, but still exclude it from what are considered preferable for the invalid, 66°.2 to 71°.6.

For the large majority of those visiting the watering places, those not to be considered invalids, but seekers after recreation and pleasure, retiring for a time from the confinement and annoyances of business in the metropolis, or from the enervating influences of the malarial valleys of the interior, Santa Cruz presents most excellent advantages, in its fine beach and other facilities for bathing, its comfortable accommodations, its pure air, and its beautiful drives.

For those weakened by disease, for delicate females, and anæmic children, for that class who visit our watering places as real invalids for the anticipated benefit of sea bathing, a higher temperature would be desirable.

A course of sea-bathing is not to be undertaken rashly, nor without a proper regard to the nature of the disease and the constitution of the invalid. But, even for those to whom the pleasures of surf-bathing may be denied, there is the pure sea air, with its bracing, invigorating influences, and which are nowhere better represented than at Santa Cruz. There are also warm sea water baths to be obtained for those requiring them.

In general there are no rules taught or observed at our watering places as to the proper use of sea bathing. Everything is left to the fancy or caprice of the visitor, beyond, perhaps, general caution for safety to those requiring them. Hence, this valuable means of medication not only often fails of doing good, but sometimes becomes the agent of serious evil. No fixed or definite rules, indeed, can be laid down, as much must depend upon the circumstances of the individual, the temperature of the water, etc. Yet certain general precepts should be borne in mind, such as the number and duration of the baths and the hour. The duration of the bath suited to those of different age and constitution cannot well be predicated. The young adult, robust and inexcitable, will bear a bath of longer duration than the weak and delicate. The general precept is to leave the water before the temporary reaction is over and the second chill is felt. The weak feel this the most; the young and vigorous may scarcely feel it at all. Commonly, the period for invalids will vary from two or three minutes to fifteen or twenty.

It is a good rule never to bathe on a full stomach; let it be a short time before meals, or a sufficiently long time after meals for the work of digestion to have been in a great degree completed, or, commonly, three hours. During digestion, the nerve force is partly engaged in that work, and the engorgement then present in the internal organs is liable to dangerous aggravation. Custom at bathing places has properly designated the forenoon. Digestion of the early morning meal has then been completed, and then both air and water have felt the warming influence of the sun. The state of the tide may influence the selection of an hour for bathing. When the full tide occurs late in the forenoon or early in the afternoon, the water is some degrees warmer than at low tide.

These rules are especially to be observed by invalids. The well and robust may take greater liberties with impunity. As a general practice, no more than one bath should be taken daily.

Sea bathing is a tonic, and as such is admirably adapted to conditions of general weakness arising from mal-nutrition in the organs of assimilation or deficient innervation, but unassociated with organic disease. Cases whose causation may be included in the general term *overwork*, some forms of the neuroses, anæmia, chlorosis without heart lesion, chronic malarial disease, which had proved intractable to ordinary medication, are adapted to this treatment. Its beneficial influence, considered as a hygienic measure, is manifested upon the skin, especially in children. The capillary circulation is excited, and the pale, white complexion assumes the ruddiness of health; the appetite improves; the muscular strength increases; and the nutritive processes are carried on more vigorously.

We cannot repeat, nor is this the place to do so, the long catalogue of maladies supposed to be benefited by this agent. Among them are scrofula, especially during childhood, scrofulous affections of the joints, nasal catarrh—that form in which the individual is continually "catching cold" upon slight exposure—bronchial affections not dependent upon pulmonary lesion, disorders of menstruation, particularly menorrhagia, uterine congestion with relaxation of the ligaments, leucorrhœa, etc.

It is more important in a hygienic point of view, and more conformable to the purpose of this paper, to endeavor to point out its contra-indications. It is generally admitted that sea bathing should be *avoided* in cutaneous affections, and, except in the form of warm baths, in rheumatism—though purely muscular rheumatism has been considered an exception to the rule; generally in chorea and epilepsy, and particularly in organic diseases of the lungs and organs of circulation. Several cases have been brought directly under the attention of the writer where imminent danger resulted from inattention to this latter caution. Hence the importance of having some regulations at all our bathing establishments by which visitors, particularly invalids, may be instructed as to the use of the baths.

But aside from these considerations touching the fitness or unfitness of sea bathing as an expedient in special diseases, and regarding only its applicability to the very great majority of those who frequent our seaside watering places, it may be said, taken in connection with sea air, change of climate and habits, and the effect upon the mind of the "grand aspect of the majestic ocean," to be eminently restorative in those states of the system which, for want of a better name, are generally denominated *weakness*.

A swimming school has been established at Santa Cruz for the youth of both sexes, under competent and experienced teachers. It is confined to San Lorenzo Creek, just above its point of discharge into the bay, accessible to the cars, which run every few minutes between the creek and the city. This is an important enterprise, worthy of substantial encouragement, affording to those who avail themselves of it an accomplishment, the value of which cannot be overestimated. As an exercise for developing bodily strength and vigor, the practice of swimming has no superior, while the consciousness of the possession of the art affords a security which, in the hour of danger, is incalculable; simply as a hygienic measure it deserves encouragement. It ought, when practicable, to be made a part of the education of every child. It is easily learned, is of much more practical value than many of the studies enforced in the schools; and yet, prudently pursued, instead of preventing the acquisition of these, it imparts the vigor of mind and body so much needed by the student.

This river is smooth and shallow during the bathing season, is safe, and, so far, better adapted than the surf for the purposes of a swimming school. Bathing here is, however, at present, not free from another quite serious danger. For a mile or more above its mouth it has been made the place of deposit of the sewage of hotels, livery stables, and private residences lying in proximity to its banks. Examination showed foul accumulations of sewage, the more liquid portion constantly running into the river. The water at the point where bathing is practiced is evidently unclean, and shows floating particles of what may well be sewage. There is an odor about the place, also, which indicates the source of pollution and the presence of polluting admixture. This is certainly a source of danger to swimmers which ought not to be overlooked. The incoming tides, which extend far up along the river, take up the sewage accumulations and the foul water, and with their outgoing, carry them off into the bay; but, as is known to be true of all such cases, the undissolved portions of sewage float in and out with each rising and ebbing tide.

A system of city sewerage adapted to the use of all portions of the city, and an ordinance, properly enforced, prohibiting the discharge of sewage into the river, would seem to be plain duties of the authorities. Something ought to be done to make this river pure and fit for bathing, for as an adjunct to the surf baths it is invaluable for the purposes named. Under present circumstances, there is evident danger attending its use.

All are not so situated as to take advantage of schools for swimming, or even to learn to swim at all. But if every one, being unexpectedly immersed in deep water, could preserve his presence of mind—a most difficult thing to do under such circumstances—fewer lives would be lost by drowning. The human body, in consequence of the air contained in some of its organs, as in the lungs and digestive canal, is lighter than water, and, by proper action, may easily be sustained at the surface. Every swimmer is familiar with the fact of his ability to float upon the surface of the water, with his mouth and nose free to carry on the acts of respiration, by simply keeping the rest of the body covered, with his hands by his side, or, better still, behind his back; and this position may be maintained for a long time. In this connection, the following extract from a paper by Dr. MacCormac, of Dublin, copied from the report of the State Board of Health of Michigan for 1877 (article by Dr. R. C. Kedyie), is appropriate, and will prove interesting and valuable:

> The means of safety, or relative safety, which I have to point out, are so very simple, and, as I believe, so very effective, that I am lost in wonder that no one has thought proper to insist upon them, as in the following remarks it is my intention to do. Swimming, as ordinarily practiced, is not the most sufficing means for escaping the dangers of the water. It needs some instruction to be able to swim, and practice to be able to swim well. No doubt it is desirable to be able to swim, and to swim well. But the great majority of persons of both sexes do not

know how to swim at all. Yet, unless people can swim, and swim well—and even then they are not always successful, when the emergency comes, in preserving life—swimming is, I am persuaded, not so effective a preservative as conjoint paddling and treading water. As a rule, subject to few exceptions, persons precipitated into the water do not swim without previously learning. But paddling with the hands and treading with the feet require no prior instruction, and in the great majority of cases would save life. In swimming, the mouth is on a level with the water in the interval of the strokes; in paddling, the head is well elevated; the individual is able to look about; he can deliberate as to what is best to be done, and he is much less liable to take water into the larynx, or glottis, a casualty which, I am persuaded, causes the destruction of many. Without prejudice to the art of swimming, I would have children exercise in household tanks from the tenderest age, in the act of paddling and treading water, so as to impart the confidence which unreasoning dread tends to lessen or take away, when one is suddenly immersed, in an unusual medium. The animal, the quadruped, begins to paddle at once when cast into water, but as man does not habitually employ the anterior limbs as organs of locomotion, reason must tell him that he may, if he pleases, employ them as organs of locomotion in the water, just as readily as any four-footed animal. To be sure a man has not the habit of using his hands and arms for locomotion, as the brute has, but otherwise how much more available is the paddle-shaped hand than a hoof or a paw. Again, the man, with little or no instruction, by throwing his head well back, can float and rest at pleasure, a thing of which the brute has no conception whatever.

Of course, a little preliminary habitude is desirable, but without any preliminary habitude or instruction whatever, there is nothing to hinder man, woman, and child, were they unable, in common parlance, to swim a stroke, from beating water with the hands and feet, just as the lower animals do, and so keep themselves afloat for a protracted period—a period that in a multitude of instances would be found sufficient to invite rescue and preserve life. The action of the feet down will sustain the body. The action of the hands down will do so; *à fortiori*, the action of both will prove yet more effective. I have tried myself; one alone or both together—nay, with a single hand only—in bygone years, I am sure, hundreds of times. There is no occasion for fuss or bustle. The body, taken as a whole, is actually lighter than water, bulk for bulk, and a very moderate amount of paddling with feet and hands will be found perfectly adequate to sustain and guide its movements. In fact, so long as the individual paddles, as I here direct, he cannot sink. A horse, or dog, or cow, or cat, or swine, when immersed in water, begins instantly to paddle, and that without any prior instruction or exercise whatever. Now, a man, or woman, or child has only to do as the inferior animal does, and he, she, or it will float necessarily and inevitably.

Those who are good swimmers will be able to indorse what has been said by Dr. MacCormac in the above extract. They are plain truths which ought to be generally known. If followed by those unexpectedly immersed beyond their depth, many lives would be saved. Yet even the simple rules taught are apt to be forgotten, or their practice neglected through fright or absence of mind in the hour of danger. The swimmer, conscious of his ability to assist himself, loses not his presence of mind, and hence, will be able all the more effectually to adopt, among other expedients which practice has taught him, and which, used alternately, serve to prevent fatigue, the paddling and treading system of Dr. MacCormac.

In connection with this subject, the following circular, issued by the State Board during the past Summer, may be properly inserted:

CIRCULAR OF THE STATE BOARD OF HEALTH, CALIFORNIA.

Resuscitation of the Drowned—Methods to be Adopted on the Spot.

RESUSCITATION OF THE DROWNED.

The season for deep-water, especially sea bathing, being at hand, the State Board of Health issue the following advice and directions, which may be profitably adopted in case of accident by drowning. They are simple, always available, require no delay, and can be effectually practiced by any intelligent person, until medical aid can be obtained. Many lives are annually lost by drowning through ignorance on the part of bystanders of the proper method of restoration, and many sacrificed by the use of inefficient and improper means. The plan of treatment proposed is the "Direct Method" suggested by Dr. Howard, and adopted by the New York Life Saving Institution.

RULES.

1. Instantly turn the patient downward, with a large firm roll of clothing under his stomach and chest. Place one of his wrists or arms under his forehead, so as to keep his mouth off the

ground. Press with all your weight, or with a force proportioned to the age of the patient, two or three times, for four or five seconds each time, upon the patient's back, below the shoulder-blades, so that the water may be pressed out of the lungs and stomach, and drained freely out of the mouth; as represented in the following cut (Fig. No. 1):

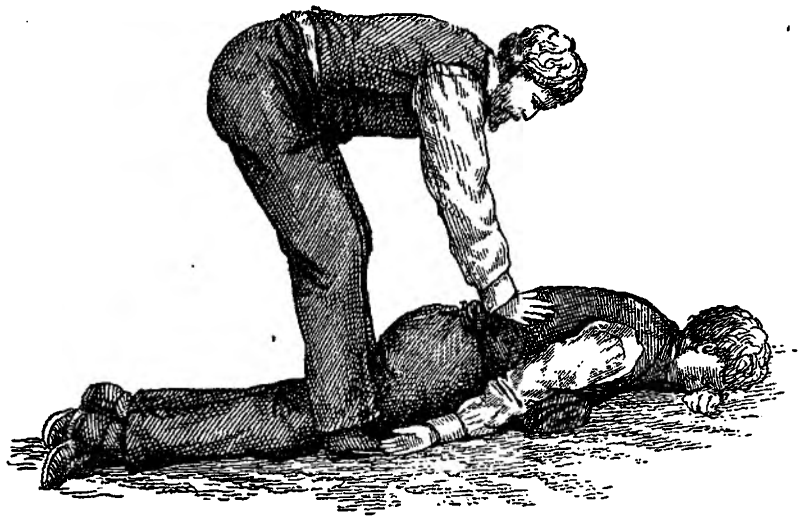

Fig. No. 1.

2. Quickly turn the patient face upward, with the roll of clothing under his back, just below the shoulder-blades, so as to make the head hang back as low as possible. Place the patient's hands above his head, where they may be secured by a handkerchief or cord. Kneel with the patient's hips between your knees, and fix your elbows firmly against your hips. Now, grasping the lower part of the patient's naked chest, squeeze his two sides together, pressing gradually forward with all your weight for about three seconds, until your face is nearly over the face of the patient, as shown in the following (Fig. No. 2):

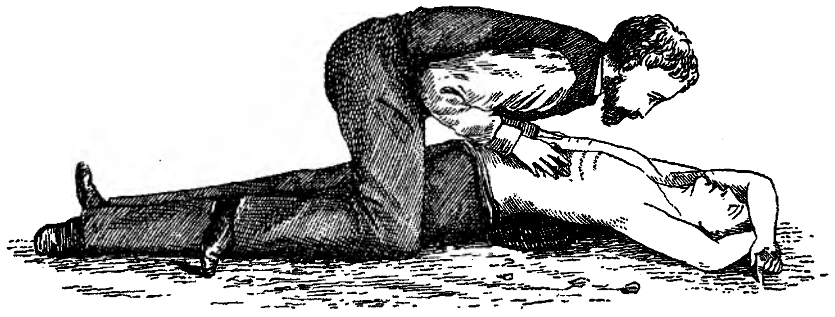

Fig. No. 2.

Then with a push, suddenly jerk yourself back (Fig. No. 3):

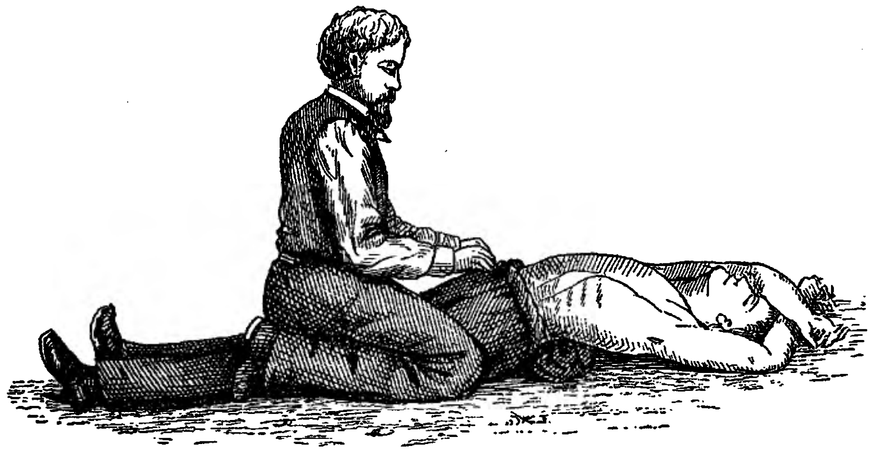

Fig. No. 3.

Rest about three seconds; then begin again (Fig. No. 2), repeating these bellows-blowing movements about eight or ten times a minute, for at least one hour, or until the patient breathes naturally. By these alternate movements, foul air is pressed out of the lungs and pure air drawn in.

Note.—The above directions must be used on the spot, the first instant the patient is taken from the water. Lose no time. A moment's delay, and success may be hopeless. Observe that neither apparent death, nor much delay in the appearance of the signs of life, afford just ground for despair. Perseverance is often rewarded by success, even after an apparently hopeless prolongation of insensibility.

Act promptly and steadily, following closely the rules given.

Prevent crowding around the patient. Fresh air is essential.

Should the patient commence to breathe, be careful not to interrupt the first short natural breaths. If they be long apart, carefully continue between them the bellows-blowing movements as before. (*Figs.* 2 *and* 3.)

After breathing is regular, let the patient be rubbed dry and wrapped in warm blankets.

As soon as the patient can certainly swallow, a little warm spirit and water may be given. This should be done cautiously, lest the patient may be choked.

After restoration, let the patient be kept quiet and sleep encouraged.

The above rules are intended for adoption in the case of adults. For younger persons, the force applied, as shown in Fig. No. 2, should be modified to suit the age, "the operator feeling his way as to how little or much he is doing, or may do, and regulating his course accordingly."

While on the subject of Santa Cruz, it is proper, even though it involve another digression, to refer briefly to the *sewerage* of the city.

The anomaly is presented of a city containing, according to the last census, about 4,000 permanent population, the resort, for four or five months in the year, of visitors, raising its Summer population to 5,000 or more, presenting in its location the most perfect facilities for sewerage, with the broad ocean by its side inviting its reception, yet relying, if we except the principal hotels, upon cesspools and privies.

There seems to be a conflict between the sanitary interests of the resident population and their pecuniary interests. An important part of the revenue of the city is dependent upon its reputation as a sanitarium—its excellent bathing facilities. The latter constitute one of its principal attractions, and a serious fear has been felt lest the system of drainage into the ocean would so pollute the water near the beach as to seriously interfere with this important interest.

There is doubtless some reason for the apprehension, unless due care is exercised in the construction of the sewers and in the selection and adjustment of the outfall. The discharge of a large quantity of solid sewage (excreta) into the bay, except under conditions which will insure its speedy removal before decomposition can take place, might have a fatal influence upon the fish, which constitute another source of revenue, besides supplying an important article of food. Fresh sewage is not hurtful to fishes, and is food for them; putrefying sewage is destructive, or drives them away. It is said, also, that admixture with salt water hastens the putrefactive process.

The serious question is how to get rid of the sewage so that it will neither float about the shore or be brought back again by the tide. Similar difficulties have arisen at most of the seaside watering places. They may, however, be generally overcome by a position of the outfall adapted to the tidal and other currents, the direction of the flow at all stages of the tide, the high Spring tides and the lowest ebb tides, and the effect of the prevailing winds. The direction of the tidal currents may be easily ascertained by a float—an ordinary champagne bottle, corked and ballasted with water, being a common and convenient expedient.

There is said to be an eddy tide in the Bay of Monterey, some distance out from shore, flowing northerly, possibly not too far distant to be taken advantage of.

An important consideration would be the rise and fall of the tide. It is said that the most difficult period of discharge for a sewer outlet occurs at the neap tides, when the tides do not rise so high or fall so low as at other times, and "as it is the lowness of the tide level that increases the efficiency of the outfall, so it will be found that if our outfalls are calculated to work efficiently at the period of the neap tides, we need not trouble ourselves about them at the period of Spring tides."

The prevailing wind may exert a considerable influence over the determination of a proper position for an outfall, where fresh sewage is discharged into the sea, consisting in part of floating fœcal, fatty, and other matters liable to be driven back to the shore.

A few of the difficulties to be encountered in the attempt to devise an entirely unobjectionable method of sewage discharge into the sea have thus been mentioned. Probably, none of them are insuperable, with even a moderate expenditure. The advantages to the health of the city, its reputation abroad, the increased comfort and convenience of its citizens, not less than of its many visitors, would more than repay the outlay. The enterprise and good taste of the people of Santa Cruz are evidenced by many tokens—its handsome buildings, its neat, shaded cottages, its excellent hotels, its pleasant drives. Only an efficient sewerage system is needed to insure its continued healthfulness.

There is said to a fall of ten feet from the head of Pacific Avenue to the bay near the outlet of the river—a distance of about one mile. There is also said, by those who ought to be familiar with the subject, to be a current just outside the point below the beach which runs northerly. These premises being correct, there should be no difficulty in the way of the successful application of engineering skill to the accomplishment of an object of such vital importance to the city. The point mentioned is below the town and the bathing grounds.

"It may be said in reference to sea outfalls," says Latham, "that owing to the great mass of water into which the sewage is ordinarily discharged, and also owing to the constant movement of the water, and to the action of the sea water itself in destroying organic matter, this mode of disposing of sewage is perfectly safe from a sanitary point of view, and every trace of sewage discharged under suitable conditions into the sea soon disappears. When we know by actual experience that the most perfect mode of dealing with sewage so as to purify it, will not remove over eighty per cent. of the impurities present, it is clear that if one volume of sewage were mixed with four volumes of water containing no sewage, the mixture would be equal in purity to the purest sewage effluent. In a sea outfall the proportionate admixture would be much greater, and is sufficient to produce the effects of purification observed under some of the most favorable conditions for securing a pure sewage effluent."

Southerly from Santa Cruz, across the bay, lies the old town of Monterey, once the Capital of California. The town of Monterey itself presents nothing inviting for the visitor, its chief attraction at present being the Hotel Del Monte and its beautiful surroundings. This hotel, situated in a natural park of live oaks and pines, has become one of the most fashionable resorts in California, and justly so. Built by the enterprise of the Southern Pacific Railroad Company, and supplied with all the appointments of a first class house, it presents a quiet yet elegant retreat for the citizen of the metropolis and of the interior, where to the pure fresh atmosphere of the seaside, the beautiful scenery, the pleasant drives, the opportunities for recreation and amusement, are added the social enjoyments of city life, happily associated with the comforts of home. Nature seems to have fitted this spot for just such uses, while the displays of art exhibited on every side, its well proportioned walks and floral adornments, have made it doubtless the most beautiful to be found in California. Its name, however, will probably be always associated with its advantages as a pleasant resort, where the mind, weary with the cares of business, may obtain rest, and the formalities of fashionable life in the cities may be exchanged for friendly intercourse, and the free, informal interchange of thought and social amenities.

Yet Monterey possesses many advantages in a sanitary point of view. Whatever benefits the sea air may afford may be found here, equally with other points on the coast. Though the beach is not much used for bathing purposes, the water being, it is said, some degrees colder in Summer than at Santa Cruz, it is provided, in connection with the hotel, with elegant arrangements for baths of every kind and of every desirable temperature. For many invalids warm indoor sea water baths are preferable to the cold bath in the open air. This is especially the case with feeble women and delicate children, with those suffering from rheumatism, and some forms of neuralgia. Some who are unable to bear cold baths at any time, may derive great benefit from these, and unless the temperature is much raised, as in the *hot bath, i. e.* exceeding 98° F., they are exempt from the dangers mentioned as incident to ordinary sea bathing, as, for example, in organic, cardiac, pulmonary, and cerebral affections. To the weary, nothing can be more refreshing—a fact well known and appreciated by the ancients. The opinion of the ancients, on this point, says Bell, was "expressed with sufficient clearness, in the fact of warm springs and baths being dedicated to Hercules, as indicative of their restorative and invigorating powers. No cold spring was dedicated to him. The warm bath is uniformly spoken of by Homer as a means of refreshing the wearied traveler, and of preparing him for the repast and the enjoyment of the other rites of hospitality—as we see in his account of the reception of Ulysses at the Court of King Alcinous, and in which the poet describes the luxurious enjoyment and the invigorating effects of the warm bath:

> The bath the King ascends;
> Where, happy as the gods that range the sky,
> He feasted every sense with every joy.
> He bathes: the damsels with officious toil,
> Shed sweets, shed unguents, in a shower of oil.
> Then o'er his limbs a gorgeous robe he spreads,
> And to the feast magnificently treads."

The principal meteorological features of Monterey are shown in the following table, prepared from observations taken at the gas works, at Del Monte, for 1880-81:

Months.	Means of Temperature.			Mean Max. and Minimum.			Cloudy or Foggy, in Days			Rain.
	8 A. M.	1 P. M.	6 P. M.	Max.	Min.	Mean.	8 A.M.	2 P.M.	9 P.M.	
August, 1880.	59°.51	69°.58	61°.32	67°.00	61°.33	64°.85	25	3	12	-----------
September, 1880.	57°.80	68°.73	58°.33	68°.66	58°.33	61°.60	25	1	19	-----------
October, 1880.	50°.67	67°.64	56°.35	67°.66	55°.00	59°.55	10	3	10	1 day.
November, 1880.	45°.53	61°.80	48°.33	62°.33	40°.33	51°.13	6	6	4	3 d's, 6 in's.
December, 1880.	50°.41	57°.93	53°.29	58°.33	49°.53	53°.89	18	17	16	14 days.
January, 1881.	46°.48	59°.96	50°.35	62°.33	45°.00	52°.67	----	----	----	7 days.
February, 1881.	52°.82	61°.50	54°.53	62°.66	52°.00	56°.28	10	10	7	11 days.
March, 1881.	52°.83	62°.80	53°.79	66°.66	48°.00	62°.82	4	5	10	5 days.
April, 1881.	60°.60	67°.10	59°.10	68°.00	58°.00	62°.26	----	----	----	4 days.
May, 1881.	59°.74	69°.03	59°.38	68°.00	58°.00	62°.72	14	5	12	1 day.
June, 1881.	62°.10	71°.50	61°.83	68°.33	62°.66	64°.92	19	5	1	2 days, light.
July, 1881.	62°.64	74°.30	62°.81	72°.62	63°.33	66°.42	8	2	9	-----------

The above table shows an agreeable equability of temperature—not too cold in Winter nor too warm in Summer; just such a temperature during the Summer months as would be acceptable as a *change* to the residents of the heated valleys of the interior. The table of "cloudy and foggy" days represents the days when there was *more or less* cloud or fog visible. Thus, for the 314 days included in that portion of the table, there were more or less clouds or fogs at 8 A. M., 130 days; at 2 P. M., 57 days; at 9 P. M., 101 days. Fogs or mists often appear early in the morning, but are commonly soon dissipated, and similar mists are not infrequently observed in the evening. There were thirty-seven days upon which some rain fell.

Through the kindness of one of the visitors at the Del Monte, the following record is obtained of the weather during forty-three days, commencing with June 17th of the present year. Seventeen days were more or less foggy at 7 A. M. On twenty-eight days the sun was visible, without fog, at the same hour. Twenty-three days were bright and sunny all day. On four days it was clear until after noon, when a light fog appeared. On one day (June 30) it was clear during the morning, with a thunderstorm at 2 P. M. Usually the early morning fog would disappear from 9 to 11 o'clock A. M.

One and a half miles from Monterey we find the "Pacific Grove Retreat," much frequented during the Summer season by families and others from the heated plains of the interior, desiring to avail themselves of the sea air and sea bathing, together with the advantages of a quiet, home-like retreat, free from the excitement and gayety commonly attendant upon the more fashionable seaside resorts. It is pleasantly and favorably located on the beach, which is said to be well adapted for bathing purposes, in a grove of pines whose aroma is agreeably mingled with the vapors of the sea. The grove is conveniently laid out in lots upon which tents or cottages may be erected, in which parties for the season may, if they prefer, enjoy all the pleasures of home. A church has been built upon the grounds, in which services are usually held on Sunday.

The climate partakes of the general character of the locality of Monterey, though modified somewhat by the pines, which afford partial shelter from the winds. I apprehend for this delightful place sanitary defects similar to those hereafter to be spoken of in connection with Camp Capitola, near Soquel, and other localities of popular resort—evils incident to the gathering of many individuals within a limited area for successive months during a number of years. The danger here is less prominent, however, in consequence of the larger area inclosed, and its greater slope towards the sea; also, in consequence of a partial drainage, which has already been undertaken. The cesspool system might and should be abolished here.

Aptos and Camp Capitola are other points on the bay which have become the resort of visitors for health and pleasure. They are within a few miles of Santa Cruz, and possess the general climatic features belonging to the latter. Camp Capitola is a camping ground near the beach, sheltered by projecting points on the coast, and, therefore, less exposed to severe winds. It is said to have an excellent beach for bathing, and it affords superior facilities for those interested in the healthful and exciting amusement of fishing. Its arrangements as a camping-ground, to be much frequented during the Summer months, might be greatly improved, especially for the convenience of females. In fact, to this and some other camping-grounds, annually occupied by visitors, the same strictures, from a hygienic standpoint, apply. Too little attention is paid to their sanitary condition—to drainage, to the disposition of sewage, and to cleanliness. At Camp Capitola, for example, the ground used is a flat just above the sea level, unsuited to good drainage, and with successive years of occupation, must become foul, saturated with organic filth, its atmosphere tainted, and productive of low fevers.

Two hundred and eight miles from San Francisco we reach Santa Barbara, known as being one of our most popular places of resort for the invalid. Its reputation is based rather upon its climatic advantages as a sanitarium for invalids than upon those which pertain to a seaside watering place, though for the latter it is well adapted. It is peculiarly suited for a Winter residence for the consumptive when not too far advanced in disease, and, as such, has been much frequented, not only by the citizens of the Pacific States, but by those from the Atlantic border, eager to exchange the cold, inclement climate of the East for the dry, genial atmosphere, the equable temperature, the mild breezes, so well suited to their condition.

The following table, heretofore published by the State Board of Health, will serve to illustrate some of its more important climatic features:

MEAN TEMPERATURE AND HUMIDITY AT SANTA BARBARA.

Reported by Dr. L. M. Dimmick.

Day of Month	1876.																		1877.	
	April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.	
	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity	Mean Daily Temperature	Mean Daily Humidity
1	56	62	66	66	59	66	68	73	72	80	68	71	73	63	57	60	58	44	59	64
2	57	81	67	57	62	70	66	75	72	78	68	68	69	79	55	63	58	61	53	55
3	53	74	64	51	61	75	66	81	70	71	61	71	68	78	56	71	58	61	59	53
4	59	77	59	62	66	74	66	78	66	76	67	70	66	82	57	74	55	58	56	48
5	51	76	62	73	63	80	67	75	66	77	66	70	65	84	60	72	61	45	62	44
6	57	77	65	63	62	68	68	77	67	76	64	70	66	81	61	67	59	46	48	73
7	54	72	63	73	65	89	69	77	68	71	64	72	68	83	66	51	57	51	58	84
8	51	58	64	67	65	68	65	65	71	71	65	74	67	79	64	56	55	61	56	83
9	58	55	59	76	65	64	70	66	70	73	69	72	65	80	64	74	56	68	57	77
10	54	49	61	73	65	68	72	62	69	73	67	72	65	86	62	75	54	66	55	84
11	54	36	58	78	68	63	72	71	70	73	68	74	65	79	59	72	58	63	54	64
12	62	51	60	71	62	72	67	80	68	73	67	77	63	80	60	63	57	75	49	63
13	59	55	60	57	68	75	68	74	66	72	69	76	63	77	57	54	55	82	45	60
14	60	55	60	66	66	74	68	74	66	71	69	78	62	82	58	47	53	77	51	54
15	65	57	62	62	65	78	69	69	69	71	66	73	66	80	57	66	53	66	54	40
16	71	58	60	60	69	72	68	69	69	69	65	79	65	80	58	74	54	57	51	70
17	62	72	62	44	69	74	66	76	68	71	66	75	67	84	64	82	51	62	54	85
18	59	71	64	57	67	75	65	68	65	73	66	78	67	74	60	78	57	67	54	84
19	59	69	63	59	65	77	68	77	67	70	64	82	68	76	58	80	56	68	56	77
20	59	69	64	56	68	70	68	72	66	64	68	85	71	78	57	86	59	70	54	82
21	58	76	63	51	68	69	72	79	65	66	63	85	71	82	61	66	52	76	57	85
22	59	77	65	62	69	68	73	78	66	73	63	77	69	72	58	54	54	73	56	78
23	57	66	64	66	67	76	72	85	67	75	63	82	67	62	56	55	55	56	57	70
24	61	67	68	67	66	79	73	74	65	78	79	79	64	64	58	53.	51	70	57	89
25	62	71	67	60	68	79	73	72	65	79	85	87	60	73	62	60	52	66	54	72
26	66	70	70	70	68	80	70	73	64	75	71	83	62	73	69	46	52	79	53	68
27	74	53	66	61	68	75	69	76	64	75	68	81	65	75	64	53	55	73	57	80
28	77	53	62	73	67	77	69	76	63	74	67	81	62	67	58	75	54	79	58	84
29	72	58	64	68	68	77	71	74	63	67	69	80	61	60	56	75	54	78	57	80
30	62	64	67	54	69	75	71	79	66	68	73	75	63	60	57	56	53	81	57	81
31	--	--	63	63	--	--	70	77	66	68	--	--	60	65	--	--	55	68	58	76

The dryness of the atmosphere, notwithstanding the location of Santa Barbara on the coast, is an important factor of the climate of the place. Taking the six months, from April to September inclusive, we find the mean humidity for April to have been 64.3; May, 62.74; June, 79.53; July, 69.1; August, 72.61; September, 73.23, or a mean of 70.25; while for October, November, December, and January, it is 64.77, 65.16, 65.39, and 70.25 respectively, giving a mean for what are considered to be rainy months, of 66.39 per cent, even less than during the Spring and Summer months.

The reputation of Santa Barbara as a residence for the consumptive, is not confined to California or to the United States; it has spread to Europe, whence a number of invalids have been sent, even during the past year, by eminent medical gentlemen, for the purpose of securing the great sanitary advantages the locality affords. It is during the early stages of disease that the full benefits of a residence here are to be experienced, and if physicians would only bear this important fact in mind, when advising the afflicted to spend the season here, Santa Barbara would soon take rank among the best of the sanitary resorts of the world. This place, taken in connection with the Ojai Valley, not far distant, and which offers all the advantages to be derived from elevation, a pure bracing mountain air, beautiful scenery, and opportunities for healthful pastime and exercise, may justly be said to present sanitary advantages of the highest order for the greater portion of the year. The one is, to a great extent, supplementary of the other, each reciprocally contributing to make up a climate admirably adapted to become the home of the consumptive in that stage of the disease capable of being improved by climatic agency.

Seventy-three miles from Santa Barbara brings the traveler to Santa Monica, a popular resort of the people of Los Angeles and the southern portion of the State, and at one time considered destined to become the "Long Branch" of the Pacific. It has several advantages as a watering place. The climate is excellent, modified by the protection it receives from the prevailing winds by Point Duma and by the islands on the west and south. The beach is considered by those accustomed to bathe there as being better adapted for the purpose than any other along the coast—smooth, hard, and gently sloping—while the water is some degrees warmer than at Santa Cruz and Monterey. There is said to be no undertow. The following table of the temperature of the air and water, furnished to the State Board of Health by the former agent of the Santa Monica Land Company, will be interesting as showing a marked contrast with the figures given for the same months at Santa Cruz:

Air ------June, 68°; July, 68°.0; August, 65°.5; September, 65°.2.
Water----June, 69°; July, 69°.5; August, 68°.0; September, 65°.5.

These temperatures closely accord with those considered by Braun to be desirable for bathing. There is a special cause for the greater temperature of the water at Santa Monica, it being the warm ocean current from the southeast which, according to Professor Davidson, courses westwardly along the coast, two or three miles in width. This current is felt even at Santa Barbara. There appears, from the observations at hand, that there is a gradual increase in the ocean temperature as we go southerly from San Francisco. The temperature of the water at the Golden Gate (San Francisco) is given at 56°; at Santa Cruz we have seen it to be, for the Summer months, 59°.7; at Santa Barbara it is 62°, and at Santa Monica 68°.

Fine bath houses have been provided at Santa Monica, for those unwilling or unable to enter the surf, and excellent arrangements made for plunge and swimming baths. Its inaccessibility and its distance from San Francisco have, however, prevented its becoming the popular resort it would otherwise have been, or which was at one time anticipated for it. At the present time it is reached only by railroad from Los Angeles.

San Diego, the last of the localities on the coast proposed to be considered, is 482 miles, by ocean, from San Francisco. The direct and most pleasant route is by steamer from San Francisco, although the California Southern Railroad is now completed to Colton and affords continuous land communication. San Diego contains a population of 3,000 to 3,500 inhabitants, and has the advantage of one of the best harbors on the coast. The town is pleasantly located, rising gradually from the bay to the higher *mesa* land, and possesses a climate distinguished for the mildness of its Winter temperature, its equability at all seasons, and, as compared with other coast cities, its exemption from severe winds.

Some of the meteorological features of the place may be learned from the following table, prepared from observations taken at the United States Signal Service station in that city by Sergeant C. E. Howgate:

Months.	Mean.	Max.	Min.	Months.	Mean.	Max.	Min.
January, 1876	51°.2	52°.3	44°.8	July, 1876	68°.6	74°.0	63°.5
February, 1876	55°.3	63°.6	48°.4	August, 1876	69°.1	74°.4	64°.6
March, 1876	54°.8	60°.4	47°.0	September, 1876	65°.9	71°.2	61°.0
April, 1876	59°.3	67°.6	51°.7	October, 1876	64°.2	70°.5	59°.3
May, 1876	61°.5	67°.4	55°.4	November, 1876	58°.9	69°.2	50°.7
June, 1876	65°.4	70°.9	61°.0	December, 1876	56°.5	66°.4	49°.1

The climatic advantages, as concerns temperature, are apparent. Between the three months of Winter, December, January, and February, and four months of Summer, June, July, August and September, there are only 12°.8 difference in the mean temperature, 11°.5 in the maxima, and 15°.2 in the minima. The minimum temperature of August, the hottest month in the year, is only 19°.8 higher than that of January, the coldest month. The mean relative humidity for the Winter of the same year is suggestive of one of the striking features of the place—69°.9 per cent.—less than for the four Summer months, which gave 76°.4 per cent. A similar condition of atmospheric humidity was alluded to as noticable at Santa Barbara.

Through the kindness of Sergeant Barwick, of the Signal Service in Sacramento, I am enabled to give the subjoined statement of the "cloudy" and "foggy" days during 1880, corresponding in time to the observations previously given for Santa Cruz and Monterey:

Months.	Cloudy days.	Foggy days.	Months.	Cloudy days.	Foggy days.	Months.	Cloudy days.	Foggy days.
January	5	------	May	15	2	September	9	------
February	5	------	June	10	------	October	15	4
March	10	------	July	17	------	November	3	1
April	11	------	August	11	------	December	9	------

The almost entire absence of fog is an important feature, and constitutes one of the principal advantages which San Diego possesses over other points on the coast. When it does arise, it is, commonly, for only a few hours in the early morning.

Probably no locality in California presents conditions more favorable for very many of those seeking a Winter residence in the early stages of consumption than San Diego. The atmosphere, when we regard the entire year, lacks the dryness, which, according to the prevailing opinion of the profession, constitutes so important a consideration in this disease, yet, it is undoubtedly true that, in many cases, the sea air, although humid, is not only not objectionable but positively beneficial. The particular class of cases belonging to this category it is not the purpose of the present paper to inquire. Those with whom the low land of the locality and the sea air do not seem to agree, may find in the Coast Range mountains, a short distance in the interior, the greater elevation, the lighter and more bracing atmosphere, and the lower relative humidity which they require, without the excessive rainfall and the low temperatures of more northern mountain resorts. Many cases do well in San Diego during the Summer months, and its agreeable temperature, its comparative exemption from fogs, seem to be productive of permanent benefit. Not a few who went there as invalids, and in whom the diagnosis of phthisis had been made by competent authority, have permanently remained, with the result of apparent restoration. In conversing with the citizens of this place, it is an every day occurrence to meet with such cases—men, now, as far as external signs can indicate, in perfect health. Indeed, permanent residence is considered by the physicians of the place to be almost indispensable to the full benefit capable of being derived from the climate.

It has been said that the ocean winds which prevail to a greater or less extent all along the coast, are, in consequence of local causes, less felt at San Diego than at most other points. This is particularly true of "Old Town," which is sheltered by location from the winds from either quarter.

IRRIGATION AND DRAINAGE.

By J. P. Widney, M.D., Member of the State Board of Health.

It is now a full century since the use of water for the irrigation of agricultural lands was commenced in Southern California. The ruins of each of the old Missions has, among its notable features, a system of dams and irrigating ditches, or zanjas, leading to orchards and vineyards, many of which still yield their yearly fruits. The area of land brought under cultivation, however, was then so limited in comparison with the great stretch of open country, and the sites of these Missions had been chosen with such careful regard to natural salubrity of situation, that the question of any unhealthfulness attending irrigation was never raised. With the great influx of population, however, during the last fifteen years, the area of land brought under the various systems of irrigation, has been, and is still, so rapidly increasing that the sanitary question becomes a very important one. It is also an especially interesting one to the physician or sanitarian, as there seems to be an apparent lack of regularity in the action of certain well established laws, and irrigation has, in some localities, been attended by a marked development of malaria, while in other localities no such results seems to have followed. There must be a reason for this—an underlying cause. That cause can best be discovered by a comparison of these different localities and their peculiarities.

The lands now under irrigation may be roughly divided into four general classes:

First.—Uplands, of which San Gabriel, Pomona, and Riverside may be taken as types. These lands have a firm soil, rather a gravelly clay, which remains moist, but not water soaked, after irrigation; the slope of the country is regular, and sufficiently rapid to prevent water from standing upon the surface; they lie in what is really the great interior valley of Southern California, corresponding to the Sacramento-San Joaquin Valley of the northern portion of the State; have consequently less force of the ocean winds than the other three classes to be mentioned; have a decidedly higher Summer temperature, and are planted chiefly with trees and vines.

Second.—River bottoms of sand or alluvium, as those of the Los Angeles and lower Santa Ana, lying outside of the ranges which shut off in part the wind from class No. 1. The lands of this second class have the full force of the sea breeze, broken somewhat by the orchards and rows of trees which line the roads. There is a fair slope, so that water does not remain in pools upon the ground; and under the alluvial surface soil a substratum of coarse gravel, many feet deep, making under-drainage thorough and complete. Lands planted in trees, vines, corn, and barley.

Third.—The sandy bottoms of the San Gabriel River, of much the same character as No. 2, but with a much less rapid surface slope; a wider and more tortuous river bed, with willow thickets and still water, and the under stratum of water standing much nearer the surface soil. The under-drainage in this valley is much less thorough than in the Los Angeles and lower Santa Ana. Lands planted largely in trees and corn. Sea breeze the same as in No. 2.

Fourth.—Cienaga lands, as in the belt which reaches from the Ballona to the lower Santa Ana, a length of some forty miles, with a width of from three to five miles. These lands are open plain, near the sea, swept by the full force of the daily sea breeze; have a heavy soil, of the adobe type; occasional springs and bogs, with natural ponds of water; in Winter become very wet; in Summer are irrigated extensively by means of artesian wells, the water from these wells often standing in pools upon the surface and draining off slowly in sluggish ditches, choked by weeds, while the heavy adobe soil gives no under-drainage. These lands are somewhat inclined to be alkaline. Trees are not extensively planted, the land being chiefly in small grain and grass or alfalfa. It is a dairy country.

In tracing the development of malaria through these four classes, it is found that the lands of the first class are almost entirely free from even the slightest trace of its existence.

The lands of the second class show its existence, but not to a sufficient degree to form a marked feature in the endemic causes of disease, except in a few limited areas, which will be again mentioned.

The lands of the third class show the presence of malaria in a notably active form, giving a well marked type to the Summer diseases.

The lands of the fourth class develop, with irrigation, a very active form of malaria, the diseases being largely of a pronounced malarial type, and running often a severe course.

These results do not, at first sight, seem altogether such as we might naturally expect. Class one, farthest from the sea, with the force of the daily sea breeze shut off by ranges of intervening hills, planted very extensively with trees, and having a higher Summer temperature, develops, with irrigation, practically no malaria; while class four, out upon the open plain, only a few miles from the sea, with no intervening hills, planted only to a slight extent with trees, swept daily by the full force of the sea breeze, and with the lowest Summer temperature of all, shows the greatest prevalence of malaria, and in the most virulent form.

There must be a reason for this. What is it?

Upon following the comparison carefully, it will be found that the only feature which bears a constant relationship to the development of malaria is drainage. Class 1, with every other cause at work to produce malaria, greater distance from the ocean, less sea breeze, higher Summer temperature, is thoroughly drained both above and below the surface, and has, practically, no malaria. The only place in this belt where I have, in my own practice, ever found traces of it, is one spot under the lee of a hill, where, by the side of a pond, the drainage is bad and the soil water-soaked.

In class No. 2, the only decidedly malarious district I have found, is a region of river bottom extending from the upper edge of Los Angeles City for a few miles on up the river, where the channel widens out and the water runs amid willow thickets, with much wet, boggy meadow land. Further down the river, as the under-drainage becomes more thorough, the evidences of malaria grow less and disappear, although in the midst of orchards, vineyards, and grain fields, where the land is irrigated many times during the Summer. The Santa Ana lands I know less about, but so far as I can learn, they follow the same general law.

In class 3, the same as class 2, except the wide river bed, the water-soaked, reedy bottoms, and the less thorough under-drainage, malaria begins to show itself actively. These lands resemble more the ill-drained section of the Los Angeles Valley, which I have described.

In class 4, the lands which, by nearly all the known laws governing the development of malaria, except the one thing, bad surface and under-drainage, should escape, we find malaria more prevalent and active than in either of the others.

The conclusion seems to be fairly just and legitimate, then, in the absence of any other apparent cause, and from what we know of the close connection between defective drainage and malaria, that, in this case, the relationship is that of cause and effect. With thorough drainage, the places which, by all other rules, should develop malaria, escape it almost entirely; without drainage, the places which, by all other rules, should be free from it, develop it constantly and actively.

The whole history of irrigation in southern California goes to impress this lesson: that, to escape malaria, drainage must go hand in hand with irrigation; that unless it does, the water which brings wealth brings also disease and death.

The cienaga lands of Los Angeles could easily be drained by a few large, deep canals, with lateral ditches, but as yet, it has seemed impossible to get the people who are the chief sufferers to unite in carrying out the work.

It is probable, that in the great interior valley of the Sacramento-San Joaquin, entirely away from all sea breeze, and with a Summer temperature much higher than in Southern California, the exemption from malaria, even with thorough drainage, would not be so complete, yet in the light of the foregoing facts it is safe to say that such drainage would unquestionably render the poison much less active.

Apart from any question of health, drainage is the solution to another difficulty—alkali. Thorough drainage, with irrigation, will leach out the soil and reclaim it, while without drainage the experience of irrigators is, that alkali increases, until eventually the lands become entirely worthless.

SHOULD THE STATE ESTABLISH AN ASYLUM FOR INEBRIATES?

By C. W. Breyfogle, A. M., M. D., Member of the State Board of Health.

While governmental law and supervision is for the good of all, it is so in two ways. First, for the purpose of protecting the law-abiding and peaceable citizen and the one who is able to care for himself and family from the assaults of, and from association with, the citizen who contemns the law, whose life is subversive of order, and whose condition, mentally or physically, may be such as to prevent him from caring for himself or family. Secondly, to provide a secure place for the retention of those who are an injury to society, and for the aid of those who are unable to care for themselves. To this end has the State established its prisons, asylums, and hospitals, and the charge and maintenance thereof are properly provided for by taxes upon the whole of its people. The propriety of such a course is never questioned, but the people accept the burden without objection as a most necessary one for the public safety and welfare. Intemperance is unquestionably our greatest social evil. Poverty, crime, debauchery, and consequent diseased degeneracy, are but its assured and legitimate offspring. While the State provides an asylum for the insane and a prison for the criminal, it is guilty of the fallacy of allowing free license to him, who, by his intemperance, is the chief author of such insanity or criminality. Health officers and physicians are unceasing in their efforts to prevent disease, yet allow its germs to be sold at every street corner. While there is not a citizen but knows that his taxes are vastly increased and his life and property placed in greater jeopardy by the intemperance everywhere to be encountered, yet he hesitates to rebuke it by word or vote.

The physical effects of alcohol are too apparent and too well known for me to endeavor to explain them within the scope of a brief paper. I simply wish to call attention to the fact that there is wisdom and sound economy in attacking an evil in its incipiency rather than when its effects are fully developed and already spread to the damage of a family, or, mayhap, a whole community. But, if the State will not provide such measures as will insure its people against the creation of inebriates, the duty then plainly devolves upon it of providing for them when made. Nor need I attempt to argue the question of the inability of some to refrain from the evil of drink, just as others are drawn into the commission of crime through hereditary mental feebleness, or through the force of evil influences which they are too weak to resist. The facts remain—the dipsomaniac is in a diseased physical condition, and this diseased physical condition adds to his diseased mind and morals, and he is wholly irresponsible as to self-care, and as justly entitled to the care of the State as is the criminal or the insane. I conclude that the

State should, therefore, provide an asylum for this class. The duty is apparent; the practicability unquestioned, having already been proven in other States; and the good results will be manifest in the check it will be to many; in the removal of dipsomaniacs from local hospitals where no systematic effort can be made toward their reform; in the removal of some, who, by their very presence in a small community, familiarize the young with vice and furnish an immoral element which has its evil influence upon all; and lastly, and by far the most important, in the prospect of reform, of making good citizens out of the heretofore bad—a reform which is practical, already demonstrated successfully, and by far outweighing in its results all consideration of expense.

In a properly managed Inebriate Asylum, reform should be the rule, not the exception. While questions of management must be founded upon the experience furnished by previous efforts, yet is one point of that management already fully proven, namely, that no reform can be permanent that is not based upon the principle that the treatment of the inebriate must be such as to familiarize him with his enemy. He must learn to resist the temptation of its immediate presence, else this temptation will at once overcome him upon his release from the institution. All efforts at reform which forbid the patient a sight, smell, or taste of alcohol while within the walls of the asylum, are useless. In this reformatory effort I take it to be granted, that, so far as possible, and it is possible in the great majority of cases, advantage would be taken of the conscientious desire for relief which may be denominated the moral phase of the patient's condition. With this desire to be freed from the vice that has enslaved him, with the surroundings of a pleasant home and proper hygienic treatment, and with careful medicinal treatment for the restoration of his physical system from the poisonous effects of the alcohol he has taken, as well as for the control of his appetite (for in this too the physician's art is highly potent), there is no reason why success should not crown the effort, and many good citizens be saved to the State, to society, and to their families.

We wonder at the harsh measures formerly in vogue for the treatment of the insane. Let us not forget that like harshness is still more misplaced in the reformatory treatment of the dipsomaniac. A gentle sympathy, united with conscientious desire for his patient's welfare, is the best remedy in the physician's pharmacopœia. The patient's improved physical condition, from proper medication and diet, will render him more susceptible to the elevating influences of kindness and improved surroundings, reform will be more desirable to him, and his moral and physical natures will be aroused to more strenuous exertions toward overcoming his evil habit, and he will thus be fortified against and made able to resist the immediate presence of his tempter, even to have it upon his person or in his room. Such a course dismisses the patient reformed. Abstinence from the temptation does not reform, else would our prison accomplish this end. On the contrary, we find the criminal made a criminal by intemperance, incarcerated for years, with no sight of alcohol, and apparently no desire for it. He is released, and the first opportunity to indulge is seized, and all his long abstinence goes for naught. Money expended in the creation of an asylum having for its basis incarceration and forced abstinence, will simply provide "a good place to sober off in." To conclude:

First—The establishment of an asylum for the treatment and reformation of inebriates is demanded as a matter of State polity, for the good of all classes of its citizens.

Second—Such an asylum must be based upon the assumption that inebriacy is an acknowledged disease, amenable to treatment.

Third—Reform, thorough and complete, must be aimed at, by throwing the patient upon his own resources as to recuperation, by giving him the kindest care and proper mental and physical occupation, by the influences of a carefully selected diet, by ample exercise, by pleasant surroundings, and by combating every physical disorder by prompt and appropriate medication.

Fourth—He must be exposed to temptation, until, by familiarity, the presence of alcohol excites no desire for its use.

Fifth—He should constantly be made to understand that the whole aim of the institution is to assist him in his efforts to reform, and he should be held accountable for his conduct to this relation alone.

THE ANIMAL FOOD WE EAT,

AND THE MEANS WHICH SHOULD BE ADOPTED TO PREVENT THE SALE OF UNWHOLESOME MEATS.

By W. R. Cluness, A. M., M. D., Member of the State Board of Health.

It is not our intention to treat the subject of this paper in anything like an exhaustive manner, but rather to comment briefly upon some points in connection therewith which, it is believed, are not generally understood, but which are of vital importance to the health of the community. From a humanitarian standpoint so many interesting suggestions might be offered which ultimately involve the health and happiness of mankind that we are almost persuaded to dwell upon them; or we might even attempt to disprove the too commonly accepted notion that our food animals were created altogether for the use of man and not for their own enjoyment. Such a consideration would, however, be foreign to our purpose; nor, indeed, is it of much practical importance to the public to determine anything regarding the subject beyond the fact that the flesh of the animal be wholesome when prepared for consumption. For the present, therefore, we propose confining ourselves to a brief consideration of animal food and its effects upon the system when eaten in an unwholesome condition; to some of the means which should be adopted by grazers for the purpose of raising healthy cattle; their transportation to market; the manner in which they should be slaughtered, and the surveillance which should be adopted to prevent the sale of diseased meats of all kinds. And when we reflect how largely animal food enters into the *necessities* of the public it will be readily understood how important it becomes that it should be not only wholesome when eaten, but of the best obtainable quality as well. We have somewhere read that there are at least one hundred millions of animals of all kinds slaughtered annually in this country for food, making about two animals for each man, woman and child in our whole territory; and when it is known that it is susceptible of proof that nearly, if not fully, one fourth of this vast multitude of animals is actually diseased before being slaughtered, and an equal amount of the flesh becomes diseased and consequently unfit for food before it reaches the consumers, after it leaves the abattoirs, some idea of the amount of sickness resulting therefrom, and one of the greatest causes of our mortality will be more readily comprehended. Especially is this true and demonstrable during our summer months, when animal food of all kinds is more liable to decay and become unfit for consumption. To the physician the deleterious effects of unwholesome animal food when taken into the stomach are of almost daily observation, for many of the cases of gastralgia, gastritis, dyspepsia, diarrhea, and other forms of derangement and disease of the alimentary canal, which he is called upon to treat can be traced directly to the eating of a diseased oyster or an unwholesome piece of meat.

THE RAISING OF CATTLE FOR THE MARKET.

So far as the raising of cattle concerns the consumers thereof, but little objection can be offered, for in a country like ours (referring more especially to Idaho, Montana, Utah, Oregon, Washington Territory, Arizona, New Mexico, and Texas), in which much of the land required for grazing purposes can either be purchased cheaply, or occupied without purchase, and in which the Winters are not so long or severe as in our Eastern and New England States, and where such vast ranges are obtainable, the opportunities and advantages offered for the production of quality as well as quantity, can nowhere be excelled. And it is gratifying to know that our cattle raisers are learning to form a just appreciation of the importance of propagating from the best stock, and those only that are healthy. When they learn, moreover, that inferior animals, and especially those used for consumption as food, are subject to many of the diseases with which man is afflicted, acquired as well as hereditary, and that these diseases are communicable to those who partake of the flesh of animals thus diseased, it is believed they will not be slow to take advantage of the knowledge thereof for their own benefit, as well as for the protection of the health of the consumers of their products. A more thorough knowledge of the importance of this subject will doubtless become apparent as our grazers acquire knowledge and experience, and in proportion as the range obtainable becomes diminished, and the amount required for consumption increases. Where one animal is now required, two or more will soon be needed, and from territory largely decreased by a rapidly increasing agricultural population. Sufficient, however, for the day is the evil thereof. For the present, and in the sections of country referred to, an abundance of the richest and most juicy grasses is usually found at all seasons of the year, and the country is generally well watered, and sufficiently protected by shade trees to prevent the cattle from becoming overheated by the sun—considerations which the intelligent grazier has learned to appreciate as being of the first importance in raising healthy animals. In addition to these important factors, experience conclusively proves, that in proportion to the thoroughness of the breeding and the care bestowed in nurturing and maturing the animal to the fullest possible extent, from its earliest infancy up to the time it is ready for the market, so will be the quality of the flesh for food. Even the manner of herding and driving the animals to market materially influences the quality of the flesh; for when driven hastily, and goaded by men, and chased by dogs, the anger, fear, and excitement incident thereto affect injuriously the flesh of the animals, and render it unfit for food, and positively dangerous to the consumer. Many examples are recorded of the injurious effects of the flesh of animals thus driven to market and overheated, protracted illness, or even sudden death, resulting.

TRANSPORTATION OF ANIMALS TO MARKET.

It is a matter of observation that many car loads of cattle, hogs, sheep and calves are transported almost daily over our railroads from the interior of our State, as well as from the neighboring States and Territories, to our cities for consumption, and that those animals thus transported are conveyed in cars, each one of which contains as many animals as can, by any possibility, be crowded into it. Each car is thirty feet in length and consists of but one compartment. The animals, as stated, are so crowded together that it is impossible for any of them to lie down and rest without being trampled upon and injured to such an extent as to render their flesh wholly unfit for consumption, or are thus killed outright. The law governing their transportation requires that they shall be removed from the cars once every twenty-eight hours, for the period of five hours, at least, for rest, food and water. In this manner are the cattle, intended for consumption, transported over our railroads, frequently for several hundred miles without food or water, and, from information obtained from the owners of cattle, as well as from butchers and others, it is ascertained that animals not infrequently die during transit from natural causes or from disease, or are trampled to death by those that are more healthy and vigorous. And it is further ascertained from the same authorities that these animals are not cast away and buried as being wholly unfit for any purpose, but not infrequently find their way into our market stalls, where they are, of course, sold to customers. And so adroit have butchers become in dressing and preparing such carcasses for sale that even their fellow experts are unable to distinguish them from those that are slaughtered. Even hogs that die during transportation, or by the wayside, from becoming over-heated and from fatigue, or even disease, are not allowed to waste, but are tried into lard, which, of course, finds its way into our biscuits, cakes, pies, and other articles of daily consumption. Not even the bruised and battered pieces of flesh, which are cut by the butchers from the carcasses of animals injured during transportation, are thrown away, but "are sold and converted." said a gentleman in authority to us, "into canned meat." We forbear making further comment upon this part of our subject, although many particulars of a like repulsive character are in our possession which might be detailed *ad nauseam*.

Who, in view of these facts, will gainsay the opinion of the late Dr. Derby, Secretary of the Massachusetts State Board of Health, "that the transportation of animals in this country, at the present, is, in main, barbarous and infernal." And this was said about ten years ago, when the same method of transportation existed, and even to the present is largely adopted in the Eastern States, and which now prevails in this. But that a better, more humane, and more profitable method of transporting animals to market can readily be adopted, has not been doubted for many years, the only surprise being that it has not been universally used or enforced by legislative enactment heretofore. Contrast the system referred to with that spoken of in the Scientific American of June 24th, where we read that "the improved cars are each forty feet long, inside measurement, or ten feet longer than the ordinary cattle cars. Each car contains sixteen stalls, eight of which face to one side and eight to the other. These stalls are two and a half feet in width and eight and a half in length, and seven and a half in height, allowing ample room for the largest steer to lie down on and rise from his comfortable dried sand bed of an inch and a half in thickness. They are separated by gates, which are cushioned, with spring fastenings, against which the animals can lean without being bruised by the motion of the train. * * * In front of the animals, along the sides of the cars, are continuous troughs, for feed and water. The cattle are watered at stations along the road, and at the same time supplied with hay, to be eaten while the train is in motion." And we are informed in the same article that instead of losing from seventy to one hundred pounds each, in weight, as formerly, during transit from Chicago to New York, the average shrinkage was but twenty pounds; and, instead of traveling at the rate of from eight to twelve miles per hour, the average speed in this State, the speed of these cars, between Buffalo and New York, was from thirty to forty-five miles per hour.

We believe, with Mr. Angell, President of the Massachusetts Society for the Prevention of Cruelty to Animals, that when these cars come into general use railroads will make more money, because one third to one half more cars will be required to transport the same number of cattle; dealers will make more money, because (say nothing of animals that die on the passage) an enormous waste of the best parts of the meat will be saved, and this saving will not only pay the increased charges of transportation, but also leave an immense margin of gain; and consumers, getting wholesome meats at one half to three fourths the prices they now pay for diseased meats, will buy larger quantities, and so increase the trade.

SLAUGHTERING OF ANIMALS.

It is probable that few persons ever make the inquiry how animals are slaughtered, nor is it likely that many ever imagine that it affects, in any manner, either for good or for evil, the flesh of the animal. In the light of science, however, it makes considerable difference to the consumer how animals are killed. The hunter soon learns to appreciate the importance of this fact, for when his game has been long chased by the hounds he knows that the flesh is thereby rendered soft and flabby, and consequently unwholesome; and we have been told that he not infrequently defers sending the fatal bullet through the heart of the deer thus overheated, even at the risk of entirely losing his game, until it has had an opportunity of slaking its thirst and appeasing its hunger, and until the injurious effects arising from fatigue, fear, and overheat have passed off. What the huntsman has learned by experience, it is to be feared the butcher does not always profit by, excepting so far as it concerns the increased number of dollars he may make in the transaction; the health of the consumers of his products being rarely, if ever, taken into consideration.

But let us see what has been said upon this subject by the ablest investigators in our country. In a lecture delivered by Doctor Slade, Professor of Zoology, of Harvard University, before the Massachusetts State Board of Agriculture, he says: "The animal to be slaughtered should be conducted to the spot selected, quietly, without the use of goad or club, and everything calculated to alarm should be removed. All slaughtering premises should be kept cleansed from blood, and no carcasses be allowed to hang in view. No animal should be allowed to witness the death of another. Trifling as these measures may appear to the professional butcher, they are of vast importance, not only in view of avoiding cruelty, but as affecting the wholesomeness of meat; there being no question as to the effects of torture, cruelty, and fear upon the secretions, and if upon the secretions, necessarily upon the flesh." Sir Francis Head tells us that animals, before being slaughtered, should be kept in a place made clean by every means that can be devised, in which there is a constant flow of water, and should be slaughtered without knowledge and without pain.

Contrast this with the manner in which our butchers slaughter their animals. Go with me to any of the slaughter houses of this city, and let us see what we will learn. As we approach the premises, we observe a number of cattle, weary, dusty and lank, being driven, under a broiling sun, along the street, and into a large field. Here, we are informed, it is the custom of the owners to allow them to remain until the deleterious effects already mentioned have disappeared by food and rest. Then, as required, a number are driven into a large corral; thence a few are driven into a smaller one, at one side of which is a gate leading into a narrow passage-way, capable of containing but a few animals, and which they follow to its termination, more securely built in front and upon either side, and of sufficient capacity to contain two or three good sized animals only. As the requisite number enters, a heavy gate is allowed to descend, thus separating them from the others, and placing them under control. The butcher now ascends to the roof of the compartment, and, with a spear-shaped instrument well poised in his hands, seeks his opportunity, and sends the instrument into the medulla, killing the animal quickly and almost painlessly. As soon as the others are similarly disposed of, a gate in front is raised, and, with a rope and windlass, the animals are hauled into the slaughter house proper, immediately adjoining, where they are soon prepared for market. To all of this, so far, no special objection can be offered; but when it is known that the whole establishment "smells to heaven" from decaying blood and offal, and from the filth and nastiness of hundreds of hogs, wading to their bellies in material much of which is composed of decaying and rotten offal, in an adjoining corral, and that, in the compartment in which the animals are knocked down, the decaying blood of those previously killed lies at least two inches deep, in places, very serious objections are interposed in the interest of humanity as well as of health. Nor is the floor upon which the animals are dressed more cleanly than that upon which they are killed, the condition of both being indescribably filthy and offensive.

But accompany us to the abattoirs of South San Francisco and let us ascertain the manner in which the business of slaughtering animals for the markets is there conducted, as well as the condition of the animals before being slaughtered. The buildings, as is well known, are constructed in shoal-water upon piles, and being located beyond the thickly settled portion of the city but little objection can be offered by those living nearest to them; for, being exposed to the influence of the prevailing south winds they are thereby rendered as free from offensive odors as such institutions can readily be made when reasonable care and cleanliness are adopted. But as we approach them we observe herds of cattle and droves of sheep and hogs being driven along the wharves, over which pass street cars, horses and vehicles of all kinds, as well as hundreds of pedestrians daily. We observe them to be whipped and goaded at times in the most inhuman manner, and to be crowded together and bruised and battered against the wharves and wheels of the vehicles, until they ultimately reach the corrals adjoining the slaughter houses. There, as in the abattoirs at Sacramento, a few are driven into a smaller corral, from which those that are to be butchered immediately are driven into a smaller and narrower compartment, where they are separated from the herd and kept in close quarters by the dropping of a heavy gate in the rear. The noose of a heavy rope is now thrown over the head of one after the other of the animals, and they are wound by the neck by a windlass into the slaughter-house adjoining, the floor of which is reeking with the blood and offal of animals already butchered, and where carcasses are hanging in full view within five feet of them. Frantic and wild with terror, half starved and dying of thirst, as we are told they are at times, they are thus dragged by the necks, their heads being gradually forced to the bloody floor by means of a series of rings, through which the rope passes, writhing and twisting, and not infrequently bellowing in anger and from pain, until an opportunity is afforded the butcher to deal the fatal blow with a hammer or ax. But it occasionally happens that the aim is missed and the blow is received upon the horn, nose, eye, cheek or other part of the head of the animal, infuriating him and exciting him to the wildest frenzy. A few more blows are dealt as opportunity offers, and the animal is battered to death. The condition of the floors of these establishments is filthy in the extreme, rendered so, of course, by the vastly greater number of animals slaughtered there than in the less pretentious ones already referred to. In full view of hundreds of carcasses of animals hanging upon the walls and throughout the slaughter-houses, and in the presence of animals just knocked down, and yet in the throes of death, others are dragged in and similarly disposed of. And it occasionally happens that a powerful animal, when thus frenzied with fear and anger, breaks the rope, and in his rage and fury is thus let loose amongst the dead and dying. And of such are the animal foods which, without proper inspection, are daily sent into our markets; and thus is the beef made with which our tables are supplied.

Much might be said, did time permit, regarding the manner of killing of calves, sheep and hogs, which would perhaps be edifying, if not extremely disgusting, to the consumers thereof; suffice it, however, to say that like objections exist, as in the manner of caring for and slaughtering beef cattle. We had also intended referring to the manner in which poultry, as well as all kinds of fish and game, are prepared for market and there kept until disposed of to consumers, but must defer the consideration thereof for the present at least.

Is it any wonder, in view of what has been said, that diarrheal and other diseases of the stomach and bowels are so frequently prevalent and fatal, and is it any wonder that diseases of the alimentary canal, and those appertaining to the digestive apparatus are productive of more than half of the deaths of the human family? Let any one who has never witnessed the slaughtering of animals visit the abattoirs of any large city and see for himself how beef, pork, veal and mutton are made, and he will have learned why diarrheal and intestinal diseases are so generally prevalent, or at any rate one of the principal causes thereof. And here we are reminded of an inexcusable evil which we witnessed while visiting the abattoirs of South San Francisco, and which we are informed prevails very generally in nearly all such establishments, but which, it is not doubted, exercises a baneful influence upon the youths of our cities. We refer to the habit of allowing small boys to not only witness the slaughtering of animals of all kinds, but even to take, to them, a playful and apparently amusing part in the business; as, for example, the battering of the skulls of the animals that may happen to manifest any evidences of life after the butcher has ceased to strike, or to cut the throat of an animal under similar circumstances. "Wantonness in the child," says Dr. Ellicott, Lord Bishop of Gloucester and Bristol, "if unchecked, is sure to deepen into cruelty or indifference to it in the man." The great need of our country, said Hiram Powers, is more education of the heart. If, therefore, the parents and guardians of these children do not comprehend the great danger to which they are being exposed, and do not realize that the seeds which ripen into cruelty, wantonness, and even murder, are thus being sown, it is clearly the duty of the State to interpose and abate the evil.

EFFECTS OF DISEASED MEATS ON THE SYSTEM.

That the flesh of animals thus transported to market, and slaughtered as we have observed, is necessarily injurious to the health, and productive of much disease and even death, must be patent to every person of observation. But as physicians and those in authority have the best opportunities of witnessing the deleterious effects thereof, let us hear what a few of them have to say. In the report of the Cattle Commissioners for New York we read, "it became apparent to the Metropolitan Board of Health in New York City, that the alarming increase of obstinate and fatal diarrhea in the metropolitan districts was caused by the use of diseased meats." And they further say, "not only do western cattle lose a hundred pounds or more per head in transportation, but the tissues of their entire systems are turned into a flabby, disordered, and feverish condition." The late Professor Agassiz said: "Let me call your attention to the dangers arising from the ill treatment of beef cattle before slaughtering them." "The flesh of mammalia," says Dr. Hamlin, Medical Inspector, in his Notes on Alimentation of Armies, "undergoes great changes by reason of fasting, disturbance of sleep, and long-continued suffering, resulting in not only becoming worthless but deleterious." The Board of Health of Chicago say nearly one half of the beef, pork, and mutton offered for sale in that city was diseased and unfit for food. Much additional testimony might be adduced to the same effect did time permit, or were it at all necessary. Not only is such food dangerous to the life of human beings, but even hogs die after eating of the flesh, blood, or entrails of animals thus diseased during transportation, or overheated from any cause, and slaughtered before being allowed an opportunity of regaining the normal, healthy condition.

But, as illustrative of one of the dangers to which the consumers of animal foods are subjected, an instance occurred in our neighborhood which is well worthy of being recorded. Mr. George Swingle, a well-to-do farmer, living near Davisville, Yolo County, informs us that a disease, which he has reason to believe to have been pleuro-pneumonia, prevailed amongst his cattle during the past Winter, from which about fifty sickened and died, and before he became aware of the nature of the disease, and its intensely fatal effect upon his hogs when the flesh of the dead animals was eaten by them, between seventy and eighty of them died very suddenly. And he informs us that it made no difference how much or how little of the flesh was eaten, excepting in the duration of the fatal sickness—all perished. Can it be doubted that the flesh of such animals occasionally finds its way into our markets? Or is it improbable that some of the peculiar forms of disease terminating fatally, and which sometimes baffle the skill of the most eminent medical men, are due to just such causes?

THE REMEDY FOR THESE EVILS.

That a speedy and potent remedy for these evils should be sought and rigorously applied, will, of course, be voiced by all, by owners of abattoirs and railroads as well as by the public, for it is not doubted that all are largely ignorant of the magnitude and dangers thereof. But to be effective, it must be compulsory, for money is king; and unless statutory restrictions are enacted, there is much fear that the mere knowledge of the existence of the evil will but partially restrict it. It is, therefore, hoped that our legislators, in their wisdom, will adopt the necessary legislation at the earliest opportunity. Inspectors should be appointed whose duty it shall be to see that transportation cars are properly constructed and ventilated; that the animals transported shall not be over-crowded, and that during transit they shall be allowed an abundant supply of fresh and pure water at proper intervals, and that they be well fed; that the owners of cattle shall not be allowed to expose their animals for sale, or be butchered until after the lapse of sufficient time to afford them an opportunity of regaining the loss of weight sustained during transportation, and until they shall have fully recovered from the effects arising from fatigue, fear, anger, heat, confinement, change of location, and all other influences which tend to render their flesh soft, flabby, feverish, and unwholesome.

Lest, however, it be inferred, from what has been said, that the evils alluded to are universal, we desire to say, that it is not denied that a reasonable time is *generally* allowed animals in which to recuperate before being slaughtered; but it is asserted that a *sufficient* time for *full* restoration is rarely afforded them; for not infrequently are they slaughtered almost immediately after a long and fatiguing journey, and under the circumstances and in the condition stated.

The State of California in its wisdom has seen fit to place in the hands of its Governor the appointment of a State Board of Health, and has defined its duties, not the least important of which is, perhaps, embraced in the subject under consideration; yet, further and more definite legislation is required. And as the great body of the people learn to realize more fully than they do that the State should exercise supervision over the public health, and that many of the conditions which affect it should be placed more directly and fully under their control, because they are preventable only through their superior opportunities and special training, more attention will be paid to sanitary science, and the lessons which it teaches, and wiser legislation will be enacted, whereby such evils as those referred to will be remembered only as having actually existed within the memory of the narrator, and whereby such conditions as tend to cause sickness and premature and unnecessary death, with its long train of ultimate evil to individuals and to the State, will be forever removed. But, before concluding these crude and hastily written observations, let me quote what Mr. George T. Angell, President of the Massachusetts Society for the Prevention of Cruelty to Animals, in an admirable paper on the protection of animals, published in the Journal of Social Science for July, 1874, says, "For all these wrongs, which I have enumerated, what is the remedy? First, better transportation. The Jewish Rabbi goes to our markets and selects what appears to be a healthy animal. He stands at the slaughter-house while it is being slaughtered and dressed. During the process, he carefully examines its internal organs, and if he finds the slightest trace of disease, passes it over to the Christian. When public opinion shall demand the same inspection of animals, both before and after they are killed, now practiced in Continental European cities, and by the Jews, so far as I am informed, everywhere, and the Christian Inspector will stand at our cattle markets, side by side with the Jewish Rabbi, to condemn, and cause to be destroyed the meats of every diseased animal, then animals will be brought to our markets without cruelty, and the Christian will eat as good meat as the Jew."

ON INTOXICATING DRINKS, INEBRIATE ASYLUMS, ETC.

By H. Gibbons, M. D.

Of all the many causes of disease and suffering in the human family, no one can begin to compare with the use of intoxicating drinks. It may well be questioned whether this one cause is not more than equal to all others combined. Certainly it is so, if we include effects, both physical and moral. I mention the *use* rather than the abuse, because the one so generally tends to the other. Indeed, the use by persons in health is in itself an abuse. Alcoholic drink in every form is a medicine; and everybody knows that medicines are not only unnecessary to persons in health, but hurtful. Besides, the habitual use impairs and destroys that sensibility to the effect on which the medicinal value depends. It follows, that every person who drinks habitually, cuts himself off, in greater or less degree, from whatever good they might do him in case of sickness.

A large class of diseases engendered by filth or propagated by contagion, are set down as preventable. All over the civilized world, sanitarians are laboriously engaged in warding them off and arresting their progress. By such labors has the average duration of human life been considerably prolonged in the present century. Meanwhile, we cherish in our midst the most perniciously infectious and the most fatally contagious of all maladies, to wit, the drinking habit; which is quite as preventable as other forms of pestilence. To prevent entirely the accumulation of disease-breeding filth—to stamp out from our country the scourge of smallpox through the prophylactic influence of vaccination—to ward off altogether the scourges of cholera and yellow fever by quarantine and other means—involve practical impossibilities as great as the complete extirpation of the drinking habit. Were we a nation of abstainers, entirely free from the curse but fully cognizant of its evils, and should we, under these circumstances, behold it steadily approaching us from abroad in all its dire proportions, with one voice and one sentiment the might of the nation would be invoked to prohibit contact and contamination, and to bar it out as with gates of iron. But unfortunately it has stolen upon us so unawares as to become interwoven with trade and with social life, and incorporated with the very existence of business and society.

The evils growing out of the use of strong drink are too patent and pervading to require presentation in this brief report. No man with a spark of patriotism or humanity in his bosom can fail to recognize them, and to long for a remedy. At this moment the people of different nations are stirred up on the subject more than at any former time. Considerate and thoughtful minds, professional men, philanthropists, and statesmen, in England, France, Germany, and other countries, have awakened to the magnitude of the subject, and disclosed the alarming fact that the drinking habit is sapping the foundations of society, deteriorating and degrading the race in body and mind, impairing the national strength, and endangering the vitality, and in some cases the very existence of nations.

All experience demonstrates that the attempt to break up the drinking habits of a people by moral agencies is futile. Individual exceptions do not invalidate the rule. When men are once enslaved by the habit, it will cling to them for life, and drag them down to shame and death. There can be no general reform, unless the means of indulgence be completely removed. The temptation to indulge is irresistible when opportunities and temptations abound as at present, and every step in the pathway of the slave of habit brings him face to face with the tempter.

All civilized nations recognize the evils and dangers of intemperance, and all have attempted to restrain the drinking habit. Laws innumerable have been devised for that purpose, but without success. What wonder, under these circumstances, that the countless array of innocent sufferers throughout the land, fathers and sons, brothers and sisters, mothers and daughters, wives and husbands of the great army of three or four hundred thousand wretched drunkards within our national limits—what wonder that they, in anguish of spirit, should resort to extreme measures in order to protect themselves and redeem their fallen relatives, and save the rising generation, by endeavoring to bar out the enemy by prohibitory legislation!

Whether the substitution of wine for distilled liquors, as many good citizens contemplate through the general cultivation of the vine in the State, will tend to diminish intemperance, is not so much a question, as whether the people of California can be induced to make the change. In certain European countries where the peasantry cannot purchase or procure anything but the cheapest and poorest wines, we are told that drunkenness does not prevail. But here in California we have a population very different from that of Europe, and, however well trained in wine drinking, sooner or later brandy would be apt to follow. This is the law of nature and of habit. According to biblical history the wine countries of the East were terribly cursed with drunkenness. In those days there were no stronger drinks, for the art of distillation was unknown. That the still so generally takes its stand by the side of the wine press in California, does not favor the prospect of abolishing the use of the stronger drinks by substituting wine. Nevertheless, the wine interest has become so important in our State, so incorporated with the business life of the community, that there appears no alternative but to submit to the experiment. Fortunate will it be for the State if the expectations of wine-growers should be realized in this respect.

Inebriate asylums are doing some good by reforming a few individuals here and there. But the tendency to relapse under temptation is so strong as to weaken the public confidence in the permanency of such reformations, so long as temptations abound as they now do. At the best, however, the reformatory action of a multitude of asylums would be but a drop in the bucket. A large proportion of our boys are marching forward close on the heels of the full-grown drunkards, and ready to take their places. As benevolent institutions, asylums for inebriates are worthy of all praise. But they can make no sensible impression on the evil in mass.

Opium smoking has excited alarm among our people, and led to very stringent prohibitory legislation in certain localities. Its mischievous effects are well calculated to awaken active hostility against the extension of the vicious habit. But what are the evils of opium smoking, and the use of opium in all forms, on individuals and on the commonwealth, compared with the evils growing out of strong drink? It is not uncommon to see fifty drunkards standing at the bar of the Police Court of the metropolis on Monday morning; in fact, the number is often much larger. I have resided in San Francisco upwards of thirty-two years, and have never known of a solitary individual thus arraigned on account of exhibiting the effects of opium. More than this, I have never known or heard of one charged with a criminal offense instigated by opium; and yet we drag a man before a criminal tribunal for visiting a place where opium is smoked, whilst we cover with the protecting shield of the State thousands upon thousands of drinking places which feed our Courts and jails and penitentiaries from day to day and from year to year with a great and a growing stream of malefactors!

From a financial standpoint the presentation of the subject is equally striking. The amount of money spent annually for stimulating drinks by the people of the United States has been ascertained with reasonable accuracy. The share of California in this expenditure is not less than twelve millions of dollars. This is a voluntary tax paid for a harmful luxury. But what is the amount of the involuntary tax imposed as a consequence? From one end of the State to the other an earnest outcry is heard against excessive taxation. Men say the percentage must be reduced to one per cent of the valuation of property, or some other figure, and candidates are required to pledge themselves for the reduction, even at the expense of our educational system. A reduction of five per cent would be hailed with delight; of fifteen or twenty per cent, would fill the air with hosannas. Now, it would be easy to show that if all the varied noxious influences of strong drink were eliminated from the tax book, it would take fifty per cent from the tax bills. Very few of our citizens trouble themselves about the enormous costs to which they are annually subjected on account of the large proportion of the expenses of Courts, jails, penitentiaries, and other prisons, almshouses and other public institutions, growing out of strong drink. Apart from moral and humane considerations, it might be supposed that the financial relations of the subject alone would be sufficient to impel the taxpayers of the State to rise in mass, and, by a determined and mighty effort, to throw off the shackles which they have long borne so passively and thoughtlessly.

NAMES OF CORRESPONDENTS.

The State Board of Health desires again to express its gratitude to the correspondents who have so kindly volunteered their reports during the past year, and have so materially aided in the preparation of the present report:

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Dr. C. L. Anderson	Santa Cruz.
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Dr. F. Delmont	San Buenaventura.
Dr. C. B. Bates	Santa Barbara.
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Dr. H. J. Crumpton	Lakeport.
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SPECIAL REPORT TO THE STATE BOARD OF HEALTH.

To the President and Members of the State Board of Health:

By virtue of the authority conferred, and in response to the following circular, urgently requesting the coöperation of the State Board of Health of California in furtherance of the object stated, I attended the sessions of the American Public Health Association at Indianapolis, on the 18th ult., and respectfully submit the following report:

The purpose of the meeting was justly regarded by the members of the State Board as being one of importance, likely, if perfected, to exert a salutary influence throughout the country, and of awakening a new and lively interest in the subject of public sanitation. One of its direct results would be to exhibit the progress made in sanitary science, to display the practical fruits of the labors of the sanitarian for the promotion of the public health. It would be likely to reach the people in an attractive way, to draw attention to the subject more effectually than could possibly be done by the most elaborately written essays or arguments.

We, in California, have been so long isolated from the great body of our co-laborers in sanitary work, shut out by distance from active participation with them, and compelled to rely mainly upon our own resources and our own convictions of duty, that the present seemed a most favorable opportunity for extending to them the right hand of fellowship, to exhibit a disposition to coöperate with them in measures tending to promote the great interests in which we are mutually engaged, and to profit by their experience.

At the Convention whose sessions have recently closed, the leading sanitarians of the United States were largely represented, and though the number present was said not to have been as great as in some previous years, the general sentiment of those capable of judging was, that at no time in the history of the Association had its papers been marked by more ability or its discussions by greater earnestness and judgment than at this.

Your committee is compelled to confess to some disappointment, however, in the result, so far as relates to the special purpose of his mission. In this disappointment, others present equally shared. The particular object of the invitation, as given in the circular, seemed to be sufficiently clear, and was so understood by other delegates present. It was inferred that committees, preliminary to final action upon the subject of a "National Medical and Sanitary Exhibition," had been appointed, and had had the project under consideration, and that it only remained to receive the coöperation of the several State Boards of Health, and of others interested, and to perfect the details. Such was the legitimate deduction from the communication. The latter, in fact, gives the "directory" of one of these committees.

It appeared, however, that no such preliminary action had been had, and that the circular, though its objects met with general approval, had been premature in the shape in which it had been issued, and, to a very unfortunate degree, irresponsible.

One good result ensued. It created discussion; it brought the subject squarely before the leading sanitarians present at the session of the committee, and it ended by decided action in the Association, having in view the accomplishment of this object in 1884. Though no definite plan was decided upon, and no authoritative expression of views announced in relation thereto, it seemed to be the impression of many that the proposed exhibition would be held in the City of Washington, in connection with that of the Museum of Hygiene, established by the Navy Department, and which has already, by the aid of congressional appropriations, become an object of interest.

It is to be hoped that California will respond favorably in behalf of this undertaking, that it will unite with the States east of the Rocky Mountains, in making this proposed exhibition worthy of the cause and of the nation, a fitting display of the great advances made in sanitary science, and in the means preservative of the public health, to which the recent history of the labors of the sanitarian bears witness. In this advancement California has not been idle, and will be able, under proper encouragement, to make a good report.

It is respectfully suggested that the Legislature be asked for a small conditional appropriation to enable the State Board of Health, at the proper time, to coöperate with other State Boards and with the American Public Health Association, in the promotion of an object, the results of which must be greatly advantageous to the State and to the interests of public sanitation.

Respectfully submitted,

F. W. HATCH,
Secretary of State Board of Health.

SACRAMENTO, CAL., November 8, 1882.

JERSEY CITY, N. J., September 1, 1882.

To F. W. Hatch, M. D., Secretary State Board of Health of California:

DEAR SIR: The undersigned would earnestly request your Board to appoint one Commissioner and an alternate to meet Commissioners appointed by the National and various State Boards of Health of the United States, together with Commissioners appointed by the American Public Health Association, said Commissioners to assemble at Indianapolis, Indiana, on Wednesday, October 18, 1882, at nine o'clock, A. M., to take into consideration the question as to the best course to be pursued, which may result in holding a National Medical and Sanitary Exhibition in the year 1883.

You will oblige by informing us at your earliest convenience of the action taken by your Board of Health in the matter.

Yours very respectfully,

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WM. H. NEWELL, M. D.,
Corresponding Secretary.

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REPORT

OF THE

STATE BOARD OF EQUALIZATION

For 1881 and 1882.

STATE BOARD OF EQUALIZATION.

WARREN DUTTON, Chairman.

JAMES L. KING,	T. D. HEISKELL,
WM. JOHNSTON,	D. M. KENFIELD, Ex Officio.

E. W. MASLIN, Secretary.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

REPORT.

OFFICE OF STATE BOARD OF EQUALIZATION,
SACRAMENTO, December 1, 1882.

To his Excellency GEO. C. PERKINS, *Governor of California:*

The State Board of Equalization has the honor to submit to your Excellency its report for the years 1881 and 1882.

The statements particularly required by the Political Code to be reported, as well as others which are deemed enough of public interest to prepare, are found in the Appendix.

STATE RATE FOR EIGHTEEN HUNDRED AND EIGHTY-ONE.

The value of the assessment of 1881 was $633,579,677, which the Board increased $25,942,646, making the total, upon which the State rate of taxation was fixed, $659,522,323. The rate of State tax was 65.5 cents.

The amounts to be raised for the 33d fiscal year were:

For the General Fund	$2,190,084 00
For the School Fund	1,300,000 00
For the Interest and Sinking Fund	315,000 00
Total	$3,805,084 00

The increase by the Board was upon the whole assessment of certain counties, exclusive of railroads assessed by the Board, but the Supreme Court decided that the Constitution did not authorize the increase of money, and therefore there was a loss of $831,264, making the amount upon which taxes were paid $658,691,059, the loss to the revenue of the State being $4,791.

Schedule "D" shows in detail the counties whose assessments were increased, the percentage added and increase thereby.

Schedules "E" and "F" show the value of classes of property after the percentage had been added, but all of the other tables are based upon the returns made by the Auditors before increase by the Board, so as to be able to make comparison of the values fixed by the Assessors.

STATE RATE FOR EIGHTEEN HUNDRED AND EIGHTY-TWO.

The Auditor of Modoc County having failed to make his return in time, the Board estimated the value of the property in said county at $1,750,000. The amount of taxable property was $607,461,981, upon which the rate was fixed, to wit, 59.6 cents. The amounts to be raised for the thirty-fourth fiscal year were:

For the General Fund	$1,488,735
For the School Fund	1,300,000
For the Interest and Sinking Fund	398,000
Total	$3,186,735

When the report of the Auditor of Modoc County was received, it was found that the assessment of that county was $1,760,931, and afterwards the Auditor of Sonoma, by correction of his report, reduced the valuation of that county $150. By which increase and decrease, the actual assessed value of all property, as appears by the tables, is $607,472,762.

It nearly always occurs, in "fixing the rate of taxation sufficient to raise the specific amount of revenue directed to be raised by the Legislature," that a certain number of mills is produced. The Board has no power to disregard the terms of Sections 3696 or 3713, and in declaring that the mills form a part of the rate much needless labor is thrown upon the Controller and the various county officers, and a deficiency in the revenue of several thousand dollars ensues in each fiscal year.

We therefore recommend that Section 3713, Political Code, when it is reënacted at each session of the Legislature, should provide that when less than five mills are produced, they shall be counted as five mills, and when over five mills they shall be counted as one cent.

COMPARISON OF ASSESSMENTS.

We invite your attention to the decrease in the assessment of property in the several counties since 1880. Excluding assessments of railroads by the several Assessors in 1879, and the assessment of the same by the State Board of Equalization in 1880, we find that the assessment of real estate, improvements, personal property, and money in 1880 exceeded that of 1879 by $103,068,642. We showed in our last report that even with the stimulus of the new Constitution, the zeal of newly elected officers, and the supervision of this Board, enforced by the knowledge or belief that the Board would exercise its constitutional powers to increase the assessment where made below full cash value, the assessment of 1880 upon the same classes of property, exclusive of franchises, solvent credits, and shares of capital stock, only exceeded the assessment of 1872 by $79,250,523. We attempted to show that, if Assessors would do their duty, disregarding the illegal efforts of Boards of Supervisors to induce a low assessment, the total assessment of this State ought to equal $1,000,000,000. We regret to have to report that instead of an increase in the assessments, there has been a material reduction since 1880. The assessment of 1880, exclusive of railroad assessments, was $635,028,554; the assessment of like property in 1881 was $598,750,013, showing a decrease of $36,278,541. The assessment of 1882, exclusive of railroads, was $579,870,449, showing a decrease below that of 1881 of $18,879,564, and below that of 1880 of $55,158,105.

To arrive at a comparison between the assessment of 1882 and that of 1879, in respect to real estate, improvements, personal property, and money, we deduct from the assessment of 1879—which was $547,622,769—the amount of railroads assessed by the Assessors, and find the net to be $531,959,910; and from the assessment of 1882 by Assessors, the assessment of franchises and solvent credits—which were not assessed in 1879, and which in 1882 amounted to $9,506,579—leaving $570,363,870; thus showing that the assessment of 1882 exceeded that of 1879 by only $38,403,960.

The assessment of 1872 of real estate, improvements, personal property (exclusive of solvent credits) and money, was $542,170,889, and deducting from this sum, in round numbers, $10,000,000 for railroads, we find the above classes of property were assessed at $532,170,889. As we have shown, the assessment of the above classes of property in 1882 is $570,363,870; it appears, therefore, that the increase in the assessment of property, assessed by Assessors since 1872, a period of ten years, is only $38,192,981.

These figures show, in forcible terms, how far below a true cash value is the assessment of 1882. No one at all conversant with the history of the State for the past ten years can possibly believe that in that time no further advance in material values has been made than is expressed by the last named sum.

To those curious in figures, a study of the tables of values may prove interesting. As, for instance, in 1880 San Francisco had in money $19,747,633, and San Mateo $22,445; while in 1882, San Francisco had only $7,799,358, and San Mateo had $867,399. In 1880, Alameda had $289,056, but in 1882 all had disappeared except $73,043; Sacramento in 1880 had $412,860, but in 1882 she had only $213,315; Napa in 1880 had $124,338, in 1882 she had only $74,089; Santa Cruz in 1880 had $102,536, in 1882 only $28,917. Finally, the total amount of money assessed in 1880 was $24,678,330, while in 1882 it was only $12,702,056. The natural query is, where has the money gone? We have no means of knowing, but suspect that the banks in San Francisco and other large cities adopted the expedient resorted to by a bank in San Francisco in 1880, of purchasing in New York, by telegraph, bonds of the United States, or legal tender notes, the coin meanwhile remaining in the vaults until after the first Monday in March, when the bonds or notes are resold, and denied assessment on the ground that the money belonged to the seller of the bonds or notes.

One would imagine that values of real estate and improvements would keep pace with each other, but it is quite otherwise. Comparing the assessment of 1882 with that of 1880, the assessment of real estate decreased $73,802, while the improvements increased $149,549, in Butte County.

In Mono, the real estate increased $772,593, and the improvements decreased $124,845.

In Monterey there was a decrease in real estate of $34,508, and increase of improvements of $90,043.

In Napa, where there has been a large advance in value, arising from the sudden growth of the vineyard interests, the increase in real estate was only $1,864, and in improvements, which, by law, includes vines, $260,459.

San Francisco is the most curious; in that city there is a decrease of real estate of $13,542,820, and an increase of improvements of only $212,080. The personal property value fell off $26,277,331.

In Tulare, the increase in real estate was $2,281,796, and a decrease in improvements of $1,050,350; in personal property there was an increase of $590,989.

In Nevada, the principal county to suffer by the prohibition of hydraulic mining, the Assessor assessed about the ratio of 1880, but the Supervisors reduced the value of real estate $1,109,354; the improvements, as assessed, show a reduction of $29,095.

In Sutter, the county claiming to be most injured by hydraulic mining, the reduction in real estate values amounted to $899,007; on improvements, $24,604; but personal property was increased $14,200.

In each of nineteen counties where improvements were increased, there was a decrease in personal property.

INCREASE OF ASSESSMENTS BY BOARD.

After visiting the several counties in 1881, the Board became convinced that certain counties had not been assessed in respect particularly to real estate and improvements up to the standard of full cash value. Accordingly a rule was made and notice given to the following counties to show cause why the assessment rolls of said counties should not be raised, to wit: Alameda, Amador, Kern, San Francisco, San Mateo, Santa Barbara, Santa Cruz, Solano, Sonoma, Yolo, Colusa, and Marin.

Each county, except Amador and Santa Barbara, by some authorized party, opposed and contested the proposed increase. The Board dismissed the rule as to Kern, Santa Cruz, Colusa, and Yolo, but no showing was made by either of the remaining counties tending to disturb the conviction of the Board that it was under assessed, and accordingly the Board increased the respective assessment rolls by the addition of such percentum as should bring each valuation up to the "true value in money."

A difficulty presented itself at the threshold of this action. The Constitution expressly declares that "the State Board of Equalization is authorized to increase or lower the entire assessment roll, so as to make the [whole] assessment conform to the true value in money of the property contained in said roll." It was manifest that signal injustice would be done to those who were assessed for "money" by an addition of a percentum to the whole roll, but the letter of the Constitution was against any discrimination. Moreover, the Supreme Court had in effect, by declaring that the Board had no power to increase or lower an individual assessment, decided that our power was confined to an action upon the whole roll. A division of opinion obtained in the Board in respect to the power of the Board to raise or lower the assessment of classes of property, and in order that the question might be tested and settled, the Board increased the assessment of real estate, exclusive of improvements, in the County of Santa Barbara, in the hope that such increase would be contested, but no contest was made, and the question is still undetermined.

After notice of the increase of the entire assessment roll had been sent to the authorities of the City and County of San Francisco, the Board received notice that Mr. J. P. Dunn, the Auditor of the city and county, refused to add the percentum to the "money" assessed upon the roll.

The Attorney-General, at the request of the Board, filed a petition in the Supreme Court, for a writ of mandate to issue to Mr. Dunn, commanding him to "obey the order of the Board, increasing the entire assessment roll of the City and County of San Francisco eight per centum." The case came on for hearing, and the judgment was rendered in October, 1881. The Court directed "that the writ issue, the

Auditor in obeying the same to omit to add the percentum to money."

We admit that to increase "money" would be an injustice to the persons assessed for that class of property; but we saw no provision of the Constitution allowing us to do other than to increase the "whole of the assessment roll." The noted case of Wells, Fargo & Co. against the Board expressly stated that this Board had no right to increase or lower an individual assessment, but that our power was confined to the increasing or lowering of the entire assessment roll. Now, the moment that, as a Board, we exempt money in express terms, we exempt a class of persons from the effects of the exercise of the power to raise the entire assessment roll and inferentially indicate other classes who shall bear the burden of the increase, thus indirectly doing that which the learned Court say we cannot do as to individual assessments. The Court seemed not to perceive that the form of the assessment roll is purely a statutory form, and that while, in this year, it was easy for the Auditor to obey the mandate to exempt money, because the statute prescribes that money shall be in a separate column, it might be very difficult to comply with the opinion of the Court if the law should direct that money and other personal property should be listed simply as personal property. In such a case the law could nullify the Constitution, as construed by the Court; or, in other words, the effect of the opinion is that in order to carry out the Constitution and restrain this Board, it is necessary that the law should direct that money shall be assessed separately—the law being thus greater than the Constitution. We are not objecting to the decision; its effect is manifestly just, but we do desire to point out that by it we are permitted, in a measure, to do what the decision in the Wells, Fargo case denied us the power to do. By that case we are not to increase or lower any one assessment, but by the later case we need not increase or lower the "entire assessment roll" in terms, but we can direct the Auditor to add to or deduct from the sum of each person's assessment, exclusive of money, a certain sum of money or a percentage, as the case may be. In the Wells, Fargo case the Court expressly declared that to the Supervisors belonged the power to increase or lower an individual assessment, so as to equalize the assessment, and that where there was an inequality between the counties, *i. e.*, where any county's assessment, as an entirety, did not come up, as such, to the standard of money value, then the Board had the power to increase or lower the entire assessment roll. And by that decision we were guided. The fact of injustice by the light of that decision did affect our judgment, for it is manifest that injustice is done to each holder of a mortgage. The mortgage is assessed at its money value, or full face value, but the owner of the property mortgaged is not assessed in any one county at more than seventy-five per cent of its actual value, and in some counties even below that percentum. Hence, the Supreme Court in time will be called upon to decide that a mortgage for $1,000 cannot be increased by the addition of a percentum put by the Board upon an "entire assessment roll." The Wells, Fargo case, Banquo-like, will yet return to plague those who wounded the Constitution.

This brings us to the discussion of the reason that the assessments of 1881 and 1882 are so far below that of 1880. The truth is that there is a struggle in nearly every county in the State to reduce, within a show of decency, the assessment of the county. In 1872 it seemed confined to San Mateo County, but, like a contagious disease, the effort to defraud the State has become epidemic. Supervisors have gone so far as to instruct the Assessor to assess the property in the county below cash value.

In 1880 Assessors performed their duty measurably well, considering that they had to contend against previously fixed values and the restrictions of Boards of Supervisors, although, as we showed in our former report that the assessment was below "cash value." Assessors knew or believed, as we all believed, that the Board had the power to increase individual assessments, and this acted as a restraint upon Assessors generally.

But the decision in the case of Wells, Fargo & Co., removed all restraint. There remains no corrective power to obtain a just equalization of the assessments of the several counties, and an Assessor would be more than human if he did not yield to the pressure to lower the assessment of his county.

It may be said that there remains to the Board the power to raise the entire assessment roll. True; but the fact is apparent that notwithstanding that power, yet the Assessors reduced below that of 1880 the assessments of 1881 the sum of $36,278,541, and in 1882 the assessment below that of 1881 the sum of $18,879,564. The assessment of 1882 was reduced, it is well to remember, even in the face of the fact that this Board did increase in 1881 the assessment of certain counties.

To use the power to increase an entire assessment roll is pregnant with the rankest injustice. It is well known that Assessors make a difference in the percentage of full cash value at which real estate and personal property is assessed. As before stated, if one parts with his money upon mortgage the mortgage is assessed at its full value. Now if the whole property is not assessed at full value, a percentage added to bring the assessment to such standard must be also added to the mortgage, and on so much as is added it is so much confiscation of the mortgagee's property. Again, if real estate is assessed at seventy per cent of its value and personal property at eighty per cent, a general increase of all property, to bring the whole roll, if such a thing were possible, to full cash value, would have the effect to increase the value of personal property above its full value, and in so much unlawfully oppress the holder of personal property. These considerations induced the Board not to raise the assessment of the rolls of 1882, believing, that though some of the counties richly deserved it, such an increase would simply punish innocent persons.

We can conceive of but one procedure that will effect the object sought, and we suggest it for the use of the incoming Board.

It is not an impossible thing for the Board to ascertain the percentage at which property in the several counties shall have been assessed, for instance, in 1883. Having so ascertained, and the percentage being ascertained which should be added to each assessment to make it conform to the standard in money, the Assessor should be informed prior to the first Monday in March, 1884, that, if the assessment of that year is not up to the amount fixed by the Board as the correct amount, the Board will at the proper time add such percentage to the assessment as shall bring it to the correct amount. By this means, the Assessor is forewarned and he can average his values throughout the county, so that if the percentage is added no individual injustice will be done, and he can shield himself against any criticism behind the order of the Board.

We are firmly persuaded that the relation the Board holds to the various Assessors, under the decision in Wells, Fargo & Co., will always prevent this Board from ever effecting a correct equalization of property values in the State, and that we can hope for nothing, unless the plan above indicated is followed, until that decision is reversed or the Constitution is amended.

To show how necessary to this Board is the power over individual assessment, in order to effect an equalization of property values, or at least to compel Assessors to perform their duties, we need only to allude to one instance of neglect of public duty by the Assessor of San Francisco in 1882.

It is well known to all that the values of the franchise and other property of the Spring Valley Water Company and of the San Francisco Gas Company run far up into the millions. Yet we find that the Assessor of San Francisco assessed those corporations in 1882, as follows:

SPRING VALLEY.—Pipes in ground, $464,097; merchandise, $5,054; meters, $110,105; tools, $193; pipe on hand, $43,549; service pipe, $21,063; machinery, $36,351; money, $71,536; furniture, $1,500; lumber, $320; other property, $1,000. Total, $754,768.

SAN FRANCISCO GAS COMPANY.—Coke, etc., $3,000; merchandise, $5,000; mains, $200,000; coals, $250,000; machinery, $20,000; credits, $20,680; money, $64,900; other property, $3,700. Total, $567,280.

Some few years ago we find Spring Valley fixing the value upon its property at not less than ten million of dollars.

It will be perceived that neither company was assessed for its franchise. In 1881 the Spring Valley Water Company was assessed for its franchise at a few thousand dollars, but the Supervisors raised the amount to $5,000,000.

Neither the Assessor, nor the Board of Supervisors, of San Francisco, can be said to have forgotten the events of 1881, and, therefore, it is the more surprising to this Board that the Assessor did not assess the franchises of those companies, or failing to so assess, that the Supervisors did not order the property to be assessed, as the law provided that they had the power to do.

We urge upon the attention of the Legislature that in the above cases, this Board being removed from the local influences that so affect the Assessor and Supervisors, was in a condition to remedy so gross a fraud upon the State and the taxpayers of San Francisco, by raising the assessments of each of said companies to its true value.

We are still firmly of the opinion that before this Board can carry out the purpose of the Constitution, as intended plainly by its framers, either the case of Wells, Fargo & Co. must be reversed, or the Constitution must be amended so as to give the Board power to increase individul assessments. That the framers of the Constitution intended to confer such power, may easily be seen by reference to the debates of the Constitutional Convention.

The original section, as introduced, read that "A State Board of Equalization * * * shall be elected whose duty it shall be to equalize the valuation of the taxable property in the State for the purposes of State taxation." Mr. Wyatt offered an amendment as follows: "Provided, that said State and County Boards of Equalization shall be, and they are hereby authorized and empowered to increase or lower the entire assessment roll, or the assessments contained therein, so as to equalize the assessment of the property contained in said assessment roll, so as to make said assessments conform to the true money value of the property assessed."

He gave his reasons for the amendment, and asserted, during all the debate which followed, that this Board ought to have the power, even without notice, to raise or lower individual assessments. There was no criticism of the construction he placed upon the intent of the amendment, except that such power ought not to be exercised without a notice to the person to be affected.

Mr. Edgerton contended that the original section was all that was necessary, to wit: that the Supervisors should equalize between persons, and the State Board between counties.

Mr. Shafter contended that to raise assessments without notice would violate the most absolute principles upon which justice is administered.

Mr. Wyatt expressly said: "I want the State Board strong enough to handle particular property, and put it at their own valuation. Take the property of the Almaden Mine. If it is too big for the County Board to handle it, then I want the State Board to handle it."

Mr. Edgerton said: "The amendment confers concurrent power on the State and County Boards to raise individual assessments. He was opposed to such concurrent power and thought the original section should stand."

Mr. Townsend asked Judge Terry: "Is it your object to clothe the Board with power to raise an assessment without notice to the parties?"

Mr. Terry replied: "To raise the assessment with or without notice."

Mr. Estee opposed the amendment, and said "it would be wrong to change the assessment of a man's property in Los Angeles or San Francisco by the State Board."

The tenor of the discussion was, that if the amendment was adopted, provision should be made for giving notice.

Mr. Howard, to meet the sense of the Convention, offered the following amendment, to be inserted after the word "empowered" in Mr. Wyatt's amendment:

> Provided, said State and County Boards of Equalization are hereby authorized and empowered, under such rules of notice as the County Boards may prescribe as to county assessments, and under such rules of notice as the State Board may prescribe as to the action of the State Board, to increase or lower the entire assessment roll, or any assessment contained therein, etc.

The amendment was adopted by a vote of 60 ayes to 28 noes.

The section as amended was then referred to the Committee on Revision, and was, when reported back, adopted in the present form of the Constitution.

Nothing is therefore clearer than that the Convention understood that the section, as finally adopted, intended to give to the State Board of Equalization the power, after notice given, to increase individual assessments.

We are thus particular in our statements, because we are in earnest in urging upon the attention of the Legislature the necessity of amending the Constitution so as to grant to this Board the power granted by the Constitution, but denied to us by the construction of the Supreme Court—for without this power we fear that the Board will utterly fail to accomplish the purposes of the Constitution, to wit: the equalizing of the assessment of property within the State.

We prepared an amendment to the Constitution at the last Legislature, which was introduced, but was never reported from the committee which had it in charge.

RAILROAD TAXES.

As you are aware, the State and several counties have become involved in litigation with the Southern Pacific Railroad and the Central Pacific Railroad Companies, and with the companies owning roads, which the latter company leases or controls, in respect to the taxes due from such companies for 1880 and 1881.

As some legislation will be necessary to enforce the rights of the State and the counties of the State, it is proper to state the character of the legislation, and to point out wherein and whereby the State has failed to recover the taxes due to her.

In 1880 the Central and Southern Pacific Railroad Companies failed to pay their taxes for that year. In accordance with law, the several Tax Collectors of the counties through which the roads of the companies run, proceeded to offer such property of the company as was assessed and apportioned to the county by this Board, for sale. C. P. Huntington, an owner in and a stockholder of the Central Pacific Company, sued out a writ in the Circuit Court of the United States to enjoin the Tax Collectors of the counties from selling the property of such company for the taxes due for 1880. Judges Sawyer and Hoffman dismissed the writ, but not until the time had elapsed provided for by law within which the Collectors could sell. This case was by the petitioner appealed to the Supreme Court of the United States, which affirmed the judgment of the Court below. But the State took nothing by the decision; for the purpose of the petitioner was subserved in that the Collectors could not sell the property, as the time had passed within which their power was limited.

In 1881, before the taxes became delinquent, the Central and Southern Pacific Railroad Companies undertook, by their attorneys, by the most specious and seductive arguments, to induce the several Boards of Supervisors to reduce the assessments made by this Board, of the franchise and railway and rolling stock of said companies.

It was represented, so we understand, that in those counties where the land is not of the richest character, the companies undertook to show that the value of the land assessed as the "roadway" was assessed in excess of the value of contiguous land. Most of the Boards of Supervisors seriously listened to the argument, forgetting or ignorant, we are charitable enough to assume, of the fact that their counties were receiving a proportionate share of the value of lands in other counties of the highest value.

In some of the counties, the Supervisors, in plain disregard of the constitutional provisions which vest in this Board the exclusive power to assess those railroads, actually did reduce our assessments. The Supervisors of Sacramento County having reduced the assessment made by this Board of the Central Pacific Railroad Company, the Attorney-General commenced an action in the Supreme Court of this State, in the name of the People against the said Supervisors, to test the jurisdiction of the Boards of Supervisors of the several counties through which run railroads operated in more than one county, to raise or lower the assessment placed upon the property of such roads by this Board. In that action the judgment of the Court was that the exclusive jurisdiction of the assessment of such railroads vested in this Board, and that the order of the Supervisors purporting to reduce the assessments be annulled. The decision was rendered September 1, 1881.

In 1882 the taxes upon railroads for the year 1881 became due, and were unpaid. The several Collectors advertised the properties for sale, and were proceeding to sell the property so advertised; whereupon the Central Pacific and Southern Pacific Railroad Companies, and other companies whose lines are leased by said companies, began actions in the Superior Courts of San Francisco to enjoin the several Collectors from offering the properties for sale. These injunctions had the effect that the writs had in 1881, of restraining, in most instances, the Collectors from acting until the time had passed within which they had power to sell, which is all, we suppose, the companies desired to accomplish. The cases were finally transferred by the Judges of the Superior Court to the Court presided over by Judge Waymire, who dismissed the writs. In the meantime, this Board, under the advice of the Attorney-General, succeeded in inducing a number of the Collectors to postpone the sale of the property advertised as delinquent, in the hope that after the writs should have been dismissed, the Collectors would have time within which to offer the railroad property for sale. Among those who did so postpone the sale, was the Tax Collector of the County of Sacramento, who, after the dismissal of the writs by Judge Waymire, was about to offer for sale the railroad property advertised as delinquent in his county, when he was restrained by a writ of prohibition issued by Judge Green, of Alameda County.

As a part of the history of the case, and to comprehend how the agents and machinery of the State are used to obstruct her in the assertion of her rights, and to understand the position of Judge Green, a brief statement of the office of the writ of prohibition is necessary.

Section 5 of Article VI of the Constitution gives the Superior Courts power to issue writs of mandate and prohibition. Section 1102 of the Code of Civil Procedure, prior to March, 1881, read as follows:

> The writ of prohibition is the counterpart of the writ of mandate. It arrests the proceedings of any tribunal, corporation, board, or person, when such proceedings are in excess of the jurisdiction of such tribunal, etc.

This section received judicial interpretation by the Supreme Court in Le Conte vs. The Marshal of the Town of Berkeley, 57 Cal. Reports, p. 269.

This was a proceeding to obtain a writ of prohibition to restrain the Marshal of Berkeley from collecting a town tax. The Court say:

> A writ of prohibition does not run against a ministerial officer. The acts sought to be prohibited were not judicial acts.

After this decision was announced, the Legislature, in March, 1881, undertook to enlarge the function of the writ of prohibition by amending the section by inserting between the words "person" and "when" the following: "whether exercising functions judicial or ministerial." At the January term, 1881, of the Supreme Court, in the case of Cameron vs. Kenfield, 57 Cal., page 550, the section, as amended, came under judicial review. The Court say: "The writ mentioned in the Constitution is the writ of prohibition known to the common law. Its office is to restrain subordinate Courts and inferior judicial tribunals from exceeding their jurisdiction. It follows, that the Legislature had no power to enact the statute extending the writ so as to restrain exercise of *ministerial* functions." The opinion was filed in May, 1881.

The writ of prohibition issued by Judge Green was issued some time in February, 1882, over one year after the latter decision of the Supreme Court had been rendered. There could be no doubt of the plain decision that a writ of prohibition could not issue except to restrain the exercise of judicial functions, yet Judge Green undertook, in willful disregard of the decision of a higher, and to most Judges controlling Court, to override the law of the land, while the Attorney General, the Controller, and this Board had to stand silently by and witness this most flagitious sacrifice of the rights of the State.

We are informed by the Controller that the effect of the writs of prohibition and injunction, being to prevent the Collector from offering the property for sale, he was thereby unable to prosecute any suits against the delinquent companies for their taxes, as the precedent to his beginning such action was that the property should have been offered once for sale.

In September, 1881, the Central Pacific Railroad Company and the San Francisco and North Pacific Railroad Company, each sued out in the Supreme Court of this State a writ of review, for the purpose of testing the jurisdiction of this Board over the assessments of railroads running through more than one county. Every imaginable objection was made to the orders, powers, and acts of the Board. We do not wish to encumber this report with a full statement of the objections made; suffice it to say, that in January, 1882, the Court rendered its decision in both cases, and fully sustained the Board in every act done, or order made by it, and in the form of such acts and orders.

It may be well, however, to refer to one point made by the Central Pacific Railroad Company, as it will, in another case, be brought before the Supreme Court of the United States.

The Constitution of this State provides that the franchise, roadway, roadbed, rails, and rolling stock of all railroads operated in more than one county, shall be assessed by the State Board of Equalization at their actual value. It is also provided that mortgages and deeds of trust shall be deemed an interest in the property affected thereby, and that *except as to railroad corporations* the value of the property affected by such mortgage or deed of trust, *less the value of such security*, shall be assessed to the owner of the property.

It will be seen, therefore, that a railroad corporation does not have the benefit, as an individual does, of deducting from the value of the property the value of the security, but is assessed for the full value of its property.

The Central Pacific Company contended that such discrimination between the railroad corporation and an individual, is to deny to such corporation the "equal protection of the laws," and therefore violative of the Fourteenth Amendment of the Constitution of the United States, which reads as follows:

> Nor shall any State deprive any person of life, liberty, or property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the law.

The Supreme Court of this State, in the case above named, decided that the restriction in the Constitution of the United States does not apply to corporations; that "the plain and evident intent of the meaning of the section is, that the persons to whom the equal protection of the law is secured, are persons born or naturalized, or endowed with life and liberty, and consequently natural and not artificial persons."

With the termination of these suits in favor of the State, we congratulated ourselves that the railroad companies at last would pay their taxes, but it was to be otherwise. Efforts were made by the several railroad companies delinquent for taxes, to induce the Boards of Supervisors to compromise the taxes upon a basis of paying into the county treasuries sixty per cent of the taxes due, but this proceeding was so plainly violative of the law that, except in a few instances, the Boards of Supervisors refused to compromise.

Suddenly, as if by coöperation and concert, certain Boards of Supervisors directed the several District Attorneys to begin actions against the various companies for the taxes due for 1880 and 1881. The District Attorneys, in most of the counties, we are informed, were ordered by the Supervisors to proceed to judgment and accept sixty per cent of the taxes due and allow judgment for that much of the taxes to be entered, the company defendant, we believe, agreeing to confess judgment for such amount, and providing, if judgment should be recovered for the remainder, to pay that also. We have not been informed that any District Attorney objected to this arrangement on the ground that a judgment, being the end of the law, and being entered up for a sum certain, the right of action determined, and no recovery could be had for the remainder.

A curious phase of these cases is that under the Act of 1880, permitting the county to sue for taxes due State and county, no provision is made for attorneys' fees, and each District Attorney must look to other sources than the county or State or the judgment recovered for his compensation. We doubt if such zeal for the public weal was ever shown before where there is no legal provision for fees. The Act under which the Controller could have sued, if permitted, provided for ten per cent counsel fees to be added to the judgment and be collected from the defendant.

The State is in the anomalous position of having by law appointed certain county officers its agents to collect the taxes due her, and when the agents betray their trust the State has no means to enforce her rights.

Some legislation must be had at the coming session of the Legislature, which should seek to prevent the State from being defrauded of taxes due her, either by inflicting heavy penalties for a disregard of her rights by her agents or by changing the mode of collecting the taxes due the State.

It is true that the Attorney-General appealed a case to the Supreme Court from the Superior Court of Sacramento County, wherein one of the Judges of that Court had decided that the Attorney-General had no right to appear on behalf of the State in a suit brought to recover taxes from the Central Pacific Railroad Company, and permitted judgment to be entered for a less sum than was due, and the

Supreme Court reversed the judgment of the Court below, yet we have no guarantee that that decision of the Supreme Court will have any controlling effect upon Superior Courts or District Attorneys.

IN THE CIRCUIT COURT OF THE UNITED STATES.

After suits had been begun in the State Courts to recover the taxes due from the Central and Southern Pacific Railroad Companies, each of said companies moved the Courts to transfer the respective cases to the United States Circuit Court, basing their motions on the ground that the Constitution of this State, in so far as it provides for the assessment of railroads, is contrary to the fourteenth amendment of the Constitution of the United States.

Most, if not all of the cases, have been transferred to the Circuit Court, and in one of them the Attorney-General appeared on behalf of the State, and judgment has been rendered.

In that case, the County of San Mateo vs. The Southern Pacific Railroad Company, the defendant set up in its answer, "that the Constitution of the State is violative of the fourteenth amendment of the Constitution of the United States, in denying to the company the equal protection of the law, and by taking its property without due process of law." In other words, as stated by the Circuit Court, the company complains that "on the assessment of its property, according to which the taxes claimed were levied, an unlawful and unjust discrimination was made between its property and the property of individuals, to its disadvantage, subjecting it to an unequal share of the public burdens, and that it was not afforded an opportunity of being heard respecting the assessment."

These two objections are based, the first on the ground that the Constitution of the State provides a different system for the assessment of the property of railroad corporations from that of individuals, and because the individual is permitted to deduct from the assessment of his real property the amount of any mortgage thereon, which right is denied to a railroad corporation, and that in so far as such discrimination is permitted, the company is denied the equal protection of the law; and the second, on the ground "that the assessment was made in pursuance of the provisions of the Constitution of the State, which gave no notice to the company, nor afforded it any opportunity to be heard respecting the value of its property, or for the correction of any error of the Board, thus depriving it of its property without due process guaranteed by the amendment."

The plaintiff demurred to the sufficiency of the answer, and contended, among other objections to the answer: First, that the fourteenth amendment was adopted to protect citizens of the United States; secondly, that corporations are not persons within the meaning of the amendment, and thirdly, that the statute of 1880, and the amended statute of 1881, afforded all the notice and hearing essential to the validity of the assessment and protection of the rights of the defendant.

The demurrer was overruled, and the defendant had judgment. This decision, therefore, declares: First, that if our Constitution permits the deduction of mortgages to be made from the assessment of the property of citizens, the like privilege must be accorded to the railroad corporations assessed by the Board. Second, that before an assessment of the railroad property can be held to be valid, the corporation must be guaranteed, either by the Constitution or law, an opportunity to be heard, either as to the value of its property, or to correct any error in the assessment.

The case has been appealed to the Supreme Court of the United States, and will be heard in the month of December.

No question was directly raised whether it was competent for the Constitution of the State to provide for the assessment of railroads by a Board of Equalization, and the assessment of the property of citizens by an Assessor.

The Constitution provides "that all property (meaning all other than railroads) shall be assessed in proportion to its value, to be ascertained by law," under which it would be doubtless competent for the Legislature to declare that such property should be assessed at one half its value, whereas the Constitution provides that railroads shall be assessed by the Board at their "actual value." Judge Field, however, in his argument dwells with some force upon the difference in the modes of assessing the property of railroads and that of citizens, and says:

> As the foundation of all just and equal taxation is the assessment of the property taxed, that is, the ascertainment of its value in order that the tax may be estimated according to some ratio to the value, uniformity of taxation necessarily requires uniformity in the mode of assessment as well as in the rate of taxation; or, to quote the language of the Supreme Court of Ohio: "Uniformity in taxing implies equality in the burden of taxation, and this equality of burden cannot exist without uniformity in the mode of assessment as well as in the rate of taxation."

This looks very much as if he would have decided, had the question been presented, that even if notice had been given, and had the Constitution permitted the deduction of mortgages from the property of the railroad, that the want of uniformity in the mode of assessment of property in the State was fatal to the validity of the assessment made by the Board.

We are not able to criticise the opinions of the distinguished Judges of the Circuit Court, but we cannot refrain from pointing out the error into which Judge Sawyer fell in his concurring opinion. Objection was made that Section 3664 of Political Code, which gave the railroad companies the right to appear before the Board to be heard, and to have their assessments equalized, passed in 1881, was invalid because not passed by the majority required by the Constitution. Judge Sawyer sustained the objection, and said:

> Section 15, of Article IV, of the Constitution of California, provides that "on the final passage of all bills, they shall be by the yeas and nays upon each bill separately, and no bill shall become a law without the concurrence of a majority of the members elected to each House."
>
> It appears that the bill in question passed the House and was sent to the Senate, where it was amended by adding the provision which gives the railroad a right to file a petition with the Board to have its assessment corrected. On March fourth the House considered the Senate amendment, and, upon a call of yeas and nays, thirty-nine members voted for the amendment, and thirty-two against it; thus the votes in favor of the amendment were two less than a majority of members elected to the House, and the bill failed. The Speaker declared that this was not the *final action of the House,* and that the amendment concurred in by a vote of thirty-nine ayes to thirty-two nays was adopted. An appeal having been taken from the decision of the Chair, it was afterwards laid upon the table. Thereupon two members filed each a separate protest against the decision of the Speaker, and the certificate that the bill had passed, on the expressed ground that it did not receive the vote of a majority of the members elected to the House. If this was not the final action of the House, then, as there was no further action, the Act never *finally* passed, even by the numbers indicated. The bill, therefore, never was constitutionally passed, and never became a law.

Judge Sawyer clearly misunderstood the language of the Speaker, when he reported that officer as saying "this is not the final action of the House," and construed the meaning to be that there was to be a final action after the amendment was passed, which final action was never taken.

The original bill did pass the House by a vote of 68 ayes to 1 nay. (Journal of Assembly, page 409.) The bill then went to the Senate, which body returned the bill with an amendment, and the question came up on March 4, 1881, whether the House would concur in the amendment of the Senate.

If Judge Sawyer had counted the names put down in the printed Journal, he would have found forty-one names, though the written Journal, in the office of the Secretary of State, shows only forty, the name of Mr. Jackson being omitted. The Speaker and the House proceeded upon the assumption that forty-one did not vote for concurrence, but the Speaker, believing that it did not require a majority of those elected to concur in an amendment, on the ground that the bill once before had finally passed the House, and that concurrence in an amendment was not "final passage;" or in other words it was not necessary to read the bill, as a whole, as amended, and pass it, as amended, by a majority of those elected, to comply with the constitutional requirement that such majority should vote on final passage of a bill, then declared the amendment adopted. The Speaker again repeated his statement. See page 475, Assembly Journal.

The remarks of the Speaker are not well reported in the Journal, but that our view is the correct one is shown by the future proceedings.

Mr. Paulk appealed from the decision of the Chair, on the ground that forty-one votes were necessary for concurrence. The appeal was laid on the table by a vote of 38 ayes to 23 noes.

Three members then each filed a protest against the ruling of the Speaker, on the ground that concurrence in an amendment needed a constitutional majority vote, and one of the protestants used the following language: "I protest against the decision of the Speaker, by which decision and action *said bill was declared passed and adopted by the Assembly.*"

Thus it conclusively appears that the House adopted the rule of the Speaker, that the bill had passed, that concurrence in amendments did not need more than a majority vote of those present, and that no other action was to follow.

It appears, then, that Judge Sawyer, misapprehending the language of the Speaker, decided one point of the case upon false premises. If it had been found that the bill had passed, the Court might have decided that, at least for the assessment of 1881, the company had sufficient notice.

It might be well, however, at the incoming Legislature, to reënact Sections 3664 and 3665, in such form as to meet the views of the Court in respect to affording the companies ample time to appear and have a hearing before the Board.

The decision of the Circuit Court is worthy of the serious concern of the Legislature. The arguments advanced by the Circuit Court are presented with great force and perspicuity, and it is possible that the Supreme Court of the United States will affirm the judgment.

It is manifest that the only rational mode of assessing railroads running through more than one county is the mode adopted by the Constitution; that is, to impose that trust in a body of men selected especially for that purpose, with facilities afforded to ascertain the cost of the roads, their net and gross earnings, with time to travel to view the road and ascertain the value of land through which the railroads run, and thus be prepared from the information gained to assess the railroads at their actual value.

If the duty of assessing railroads is delegated again to county Assessors, the effect will be that the several Assessors will assess the subdivisions of the roads running through their counties at various sums, and a general reduction of railroad values below those fixed by the Board will take place.

If the Supreme Court shall decide that it is incompetent for the Constitution of this State to repose in the Board of Equalization the power to assess railroads, while to another body or other officers is delegated the power of assessing the property of citizens, it will be useless to amend our Constitution in reference to railroad assessment, and the danger of an undervaluation of railroads by Assessors can only be averted by a constitutional amendment granting to this Board the right to raise or lower individual assessments, which power this Board would exert if Assessors showed any discrimination between railroad and other property.

If the Court shall sustain the two defenses of the railroads, to wit: that the railroad companies should have the right to deduct their mortgages, and that the companies should have notice of the time when the Board would assess their property, then an amendment of the Constitution is highly necessary, and it appears to us that it would be wise forethought in this Legislature, at this session, to meet such a contingency by submitting to the people such amendments to the Constitution as shall be in harmony with the decision of the Court.

If the Constitution is left as it is in respect to mortgages upon railroads, and in the absence of any clause allowing deduction for mortgages, it is so far self-executing as to permit such deduction, there is grave doubt whether the taxes on the supposed mortgages could be collected.

The railroad companies have issued bonds upon their roads, to secure which trust deeds have been made to resident trustees who are not the beneficiaries of the trust. Now, the Constitution declares that a mortgage or trust deed, for the purpose of taxation, is to be considered an interest in the land affected by the mortgage or trust deed, and this works reasonably well where the mortgagee or trustee is the creditor or owner of the security. But a trust deed given by a railroad corporation, and the ordinary trust deed or mortgage, does not stand on all fours. In the case of such latter mortgage or trust deed, there is but one thing assessed, and that is substantially the amount of the debt secured, but the debt, or note, as such, to secure the payment of which the trust deed or mortgage is given, is not assessed. But in the case of a trust deed given by a railroad corporation, the trustees, being in nowise beneficially interested, may not be legally liable to assessment.

Taxation may further be resisted on the ground that the bonds held in other hands are liable to taxation, and that therefore to tax the trust deed and the bonds also would be double taxation.

It would not do to rely on the assessment of bonds, for they are either held out of the State or beyond the power of the Board to ascertain their ownership.

The whole matter then resolves itself into this: That, in anticipation of the possible decision of the Supreme Court against the State, the Constitution should be amended in respect:

First—Either to permit deductions for mortgages to the railroads, or to revise the whole system of allowing for deductions for mortgages.

Second—To provide for personal notice to the companies of the time of assessing, or by legal notice, by providing that the assessments shall be made within stated periods.

Third—To grant the power to the Board to increase or lower individual assessments.

We alluded to Judge Sawyer's decision, in detail, in order to impress the Legislature with the necessity of reënacting Section 3664, so as to remove all doubt, and to provide a time for notice to the railroad companies before assessment, or a time for equalizing their assessment. But we are certain that the most efficient mode to meet the decision of the Supreme Court would be by an amendment of the Constitution. It will be remembered that in the case of the People vs. The Supervisors of Sacramento County, our Supreme Court decided that the section in the Constitution which gave this Board power to assess railroads was self-executing; that is to say, it did not require legislation to put it in force, and, necessarily, a statute could not enlarge or limit the scope of the section or the powers of the Board. It would seem a logical deduction from the decision named, that a statute which should provide for a notice to the railroad companies would be inoperative, or would not avoid the decision of the Court that notice should be given. For if the Constitution is self-executing, the guarantees for the conservation of the rights of the railroads must be found in that instrument, and not be dependent upon the will of the Legislature. It therefore appears, that if the Supreme Court shall decide that a time for a hearing should be afforded and a notice given to the railroad companies, our Supreme Court will be compelled to decide that a statutory notice is insufficient. In this view of the case, the necessity of an amendment to the Constitution guaranteeing to the companies the rights named, is very essential.

RAILROAD ASSESSMENTS.

Unfortunately, the Constitution of the State described in detail the property of the railroads to be assessed by the Board, thus: "the franchise, roadway, roadbed, rails, and rolling stock of all railroads, etc." This opened the question whether each description of property must not be separately assessed, and permits the companies to address their testimony towards showing that the roadbed, rails, roadway, and rolling stock are each of small value, and leaves the "franchise" valuation to be always a matter of doubt and contention, both as to what it is and its value. The value of a railroad is not dependent alone upon one of the above essentials of a road, but upon the whole combined; and therefore the Constitution should have empowered the Board "to assess railroads running through more than one county, in the valuation of which should be included the value of roadway, roadbed, rails, rolling stock, and franchise."

TIME FOR ASSESSING RAILROADS.

The time fixed for assessing is too early in the assessment year. The Assessors in May have not fixed their values fully, and if any change is made by the Board in the assessment of railroads, so as to lower the assessment below that of the previous year, the Assessors are liable to assume that the assessment is too low, and accordingly reduce their valuations, as they did in 1882, simply because the Board reduced the valuations of that year of railroads below the assessment of 1881. Besides, in the change of members of the Board, which occurs once in four years, the incoming members have scarcely time between the time of taking office and the time of assessment to fully inform themselves of the values of the railroads to be assessed.

The mode of collecting the taxes upon railroads is radically wrong. The State Board should certify its assessment to the Controller, and also the State tax. Each Auditor should certify to the Controller the tax of the county, and the Controller should collect both the State and all the county taxes; and if any company refuses to pay its tax, the Controller should at once proceed to collect the tax by suit.

Section 3897 of the Political Code should be amended so as to repose in the Controller the duty of selling any land sold for taxes to the State. He is the financial agent of the State, and should have the control of such matters. As it is now, the Board may order property sold, it may be sold, and the Controller has no means of knowing whether it is sold, or what becomes of the money paid therefor. Section 3816 should also be amended so as to require the County Treasurers to report all deeds made to the State to the Controller instead of to the Board of Equalization.

There are a number of other amendments which should be made, but we refrain from alluding to them in detail. In the report made by this Board for 1880, we had the honor to make a number of recommendations, to none of which the Legislature paid the slightest attention. We refer to that report for our views as to the question upon which legislation is needed. We also embodied our views in a bill, which in duplicate was introduced in the Senate and Assembly, but never was reported from the committee of either house.

STATISTICS.

The Assessors are required by Section 3655 of the Political Code, to transmit to the Board of Equalization, and by Section 4081, to transmit to the Surveyor-General, certain statistics relating to the agricultural and manufacturing interests of the State. Necessarily these reports are to some extent identical. The latter section should be repealed and the reports made to the Board of Equalization.

There should be a thorough revision of the law relating to the gathering, reporting, and compiling of industrial statistics. As it is now the statistics reported by the Assessors are not in any sense valuable or trustworthy. We are all advised as to the value and importance of correct statistics. The operations of agriculture should be, and those of commerce nearly always are, guided by a knowledge of the productive capacity of the State. If the farmer could know, with certainty, for instance, the amount of grain produced in any one year, he would not be at the mercy of those who take advantage of his credulity, or wants, or ignorance, and would be enabled to market his crop at its true market value.

The State Board of Equalization should be made a Bureau of Statistics. With the proper machinery afforded, trustworthy information could be gained at the close of each harvest year, and such information distributed by means of bulletins issued by the Board among the people.

The provision for gathering statistics is entirely inefficient, and a glance at the industrial statistics published by the Surveyor-General as furnished to him and to this Board by Assessors, will show how untrustworthy they are.

If the statistics are, as at present, merely to show the growth of the State, then they ought to be collected and returned about once in five years, and in the year of the return an additional deputy should be furnished, at the expense of the State, to each Assessor, whose special duty it should be to gather such statistics as this Board shall direct. The Assessors do not deem it of much consequence to report the condition of the counties; their time is occupied with assessing. The force generally allowed them by Supervisors, or by law, to assist in the office, is scarcely sufficient to execute the ordinary duties of the office, and Assessors, as a rule, are ill paid for the services performed. There is no adequate penalty provided for neglect to comply with the requirements of the Board in relation to statistics, and altogether the whole subject of statistics is in an unsatisfactory condition.

In closing our report we beg to call the attention of the Legislature to the inadequacy of the salary of the Secretary. The duties of the Secretary are laborious, and to perform them correctly calls for an extended and intimate knowledge of the revenue system, along with an acquaintance with the Constitution and the decisions of the Courts thereupon. We therefore earnestly recommend that the salary be increased, and take this occasion to bear testimony to the fidelity and ability with which the present Secretary has fulfilled his important trust.

WARREN DUTTON, Chairman.
JAMES L. KING,
WM. JOHNSTON,
T. D. HEISKELL,
D. M. KENFIELD, Controller.

Statistics for 1881.

SCHEDULE A.

Summarized Statement of the Reports of Auditors of the several Counties, showing Total Value of Property before Increase by the Board.

Counties.	Total Value of all Property.	Counties.	Total Value of all Property.
Alameda	$45,057,966	Plumas	$2,194,714
Alpine	312,007	Sacramento	22,267,249
Amador	2,921,854	San Benito	4,111,736
Butte	12,798,168	San Bernardino	3,967,865
Calaveras	2,693,585	San Diego	6,928,983
Colusa	17,541,410	San Francisco	222,284,255
Contra Costa	8,758,344	San Joaquin	28,536,994
Del Norte	802,849	San Luis Obispo	5,029,163
El Dorado	2,895,267	San Mateo	6,538,495
Fresno	8,818,800	Santa Barbara	5,022,722
Humboldt	6,239,550	Santa Clara	26,017,127
Inyo	1,057,595	Santa Cruz	5,825,910
Kern	6,028,722	Shasta	2,728,790
Lake	2,400,408	Sierra	1,612,745
Lassen	1,215,353	Siskiyou	3,538,005
Los Angeles	20,203,791	Solano	11,617,736
Marin	7,557,500	Sonoma	17,749,290
Mariposa	1,626,421	Stanislaus	11,414,256
Mendocino	6,117,014	Sutter	4,613,181
Merced	6,647,345	Tehama	7,132,799
Modoc	1,793,270	Trinity	1,074,071
Mono	3,135,622	Tulare	7,840,993
Monterey	8,255,474	Tuolumne	1,957,337
Napa	9,157,047	Ventura	3,347,787
Nevada	8,808,607	Yolo	13,666,940
Placer	8,887,921	Yuba	4,828,644
		Total	$633,579,677

SCHEDULE B.

Showing Summarized Statement of the Reports of Auditors of the several Counties of Total Value of all Property in the State by classes, including assessments of railroads by the Board, the increase of values by the percentage added by the Board, and the final sum upon which the State rate of Taxation was fixed for the year 1881.

Real estate, other than city and town lots	$179,225,121
Improvements on same	28,082,961
City and town lots	155,314,353
Improvements on same	80,100,035
Improvements assessed to other than owners of land	1,929,011
Personal property	140,500,966
Money	13,595,566
Total, exclusive of railroad assessment	$598,750,013
Assessment of railroads by Board	34,829,664
Total value returned by Auditors	$633,579,677
Percentage added by the Board	25,942,646
Total sum upon which the tax was estimated	$659,522,323

SCHEDULE C.

Showing amounts to be raised and rate of State Tax in 1881.

For the General Fund	$2,190,084
For the School Fund	1,300,000
For the Interest and Sinking Fund	315,000
Total amount	$3,805,084
Taxable property	$659,522,323
Deducting 12 per cent for delinquencies	79,142,678
Leaves the amount upon which the tax was based	$580,379,645
The tax was apportioned as follows:	
For the General Fund	37.7 cents.
For the School Fund	22.4 cents.
For the Interest and Sinking Fund	5.4 cents.
Total rate of State Tax	65.5 cents.

Note.—The so called Debris Tax of five cents was also levied, but has been declared unconstitutional by the Supreme Court.

SCHEDULE D.

Showing the names of the Counties whose Assessment of Property was Increased by the Board, the Percentage of Increase, the Increase estimated by the Board, and the Actual Increase of the Assessment after excluding the Increase on Money.

1881.

Name of County.	Auditor's Return of Values, exclusive of Railroads.	Per cent Added.	Estimate of Addition by the Board.	Actual Increase by Addition of Percentage.
Alameda	$42,817,285	9	$3,853,555	$3,845,704
Amador	2,840,254	10	284,025	281,794
Marin	7,015,818	10	701,581	700,163
San Francisco	222.062,815	8	17,765,025	16,978,466
San Mateo	6,124,345	20	1,224,869	1,212,258
Solano	10,589,811	5	529,390	526,971
Sonoma	16,569,522	7	1,159,866	1,141,691
Santa Barbara	2,828,905	15	424,335	424,335
Totals			$25,942,646	$25,111,382

Note.—The Board increased merely the "real estate," exclusive of lots, of Santa Barbara County. As the Supreme Court decided that money could not be increased, therefore there was a loss of revenue to the State, as the following shows:

Estimated increase	$25,942,646
Actual increase	25,111,382
Deficiency	$831,264

Loss of revenue, at 65.5 cents on each $100, after deduction of 12 per cent, $4,791.

As the percentage was not added to money, the two following tables, E and F, show the amounts after the percentage was added, exclusive of money, and the total upon which the tax was collected.

SCHEDULE E.

Showing Values of Real Estate other than City Lots, and City and Town Lots, and the Improvements thereon, in the several Counties, after the percentage of Increase had been added by Auditors, for 1881.

COUNTIES.	Value of Real Estate other than city and town lots.	Value of Improvements thereon.	Value of City and Town Lots.	Value of Improvements thereon.	Value of Improvements on Real Estate assessed to persons other than owners of the Real Estate.	Total Value.
Alameda	$11,907,494	$1,817,449	$18,260,817	$9,479,631	$80,859	$41,546,250
Alpine	129,797	67,980	7,786	15,290	----------	220,853
Amador	1,105,125	631,758	130,046	427,635	18,914	2,313,478
Butte	6,840,598	671,499	461,112	803,392	105,951	8,882,552
Calaveras	1,162,062	356,333	44,842	176,855	29,956	1,770,048
Colusa	11,450,955	685,809	224,490	487,540	47,688	12,896,482
Contra Costa	4,970,519	666,709	176,928	272,251	7,750	6,094,157
Del Norte	243,816	117,659	31,520	89,950	19,925	502,870
El Dorado	853,789	425,440	111,035	271,410	91,935	1,753,609
Fresno	4,131,475	318,269	121,517	195,011	120,039	4,886,311
Humboldt	2,783,296	548,842	501,483	661,439	22,770	4,517,830
Inyo	279,682	226,830	24,465	87,815	6,768	625,560
Kern	1,934,343	354,510	100,303	133,717	13,252	2,536,125
Lake	1,210,635	409,010	60,109	138,377	6,745	1,824,876
Lassen	408,369	189,545	25,520	49,130	----------	672,564
Los Angeles	7,223,967	1,157,466	3,671,047	2,447,814	49,045	14,549,339
Marin	4,217,008	614,845	874,754	627,511	26,208	6,360,326
Mariposa	733,762	273,079	12,890	60,995	27,493	1,108,219
Mendocino	2,943,231	806,861	115,453	298,732	11,576	4,175,853
Merced	3,476,281	291,081	143,765	220,941	23,809	4,155,877
Modoc	558,289	288,376	21,420	101,906	4,947	974,938
Mono	1,473,979	421,445	137,637	306,294	12,596	2,351,951
Monterey	4,456,411	554,643	407,162	341,730	31,605	5,791,551
Napa	3,795,224	1,174,648	624,486	837,909	15,520	6,447,787
Nevada	3,897,689	754,263	331,175	1,029,225	80,775	6,093,127
Placer	2,734,774	559,888	157,574	446,919	338,893	4,238,048
Plumas	959,772	414,202	30,976	141,773	9,270	1,555,993
Sacramento	6,207,490	924,215	3,435,880	4,890,415	33,675	15,491,675
San Benito	2,313,262	275,815	121,425	184,710	11,470	2,906,682
San Bernardino	1,519,725	433,388	137,696	175,279	6,556	2,272,644

San Diego	1,583,023	137,565	1,429,188	321,033	8,270	3,479,079
San Francisco	1,140,274	62,964	121,353,406	45,585,715	53,460	168,195,819
San Joaquin	14,991,686	1,022,886	2,275,601	2,321,341	55,280	20,666,794
San Luis Obispo	2,511,324	320,734	245,100	247,790	81,974	3,406,922
San Mateo	4,203,582	1,296,630	386,712	178,986	6,438	6,072,348
Santa Barbara	2,734,413	322,867	518,827	537,168	33,907	4,147,182
Santa Clara	9,794,079	1,906,724	4,979,930	3,190,390	26,270	19,897,393
Santa Cruz	2,697,120	426,400	826,910	730,985	--------	4,681,415
Shasta	827,809	198,920	43,138	113,490	129,178	1,312,535
Sierra	706,111	205,005	23,610	173,295	525	1,108,546
Siskiyou	1,175,905	459,146	70,505	268,495	--------	1,974,051
Solano	6,464,567	698,201	596,912	875,205	56,811	8,691,696
Sonoma	9,001,900	1,994,339	1,162,379	1,619,557	27,663	13,805,838
Stanislaus	6,956,293	519,534	213,040	409,790	53,027	8,151,684
Sutter	2,734,851	340,702	34,225	81,555	4,380	3,195,713
Tehama	3,644,313	314,973	275,960	364,320	11,500	4,611,066
Trinity	493,971	102,054	19,583	24,732	--------	640,340
Tulare	3,755,795	370,705	159,552	257,565	92,436	4,636,053
Tuolumne	625,280	362,877	88,745	241,541	4,240	1,322,683
Ventura	1,746,849	230,129	191,376	164,800	8,060	2,341,214
Yolo	7,653,245	672,346	374,984	702,430	33,230	9,436,235
Yuba	1,355,410	333,285	374,195	721,080	6,700	2,790,670
Totals	$182,720,619	$28,730,843	$166,149,191	$84,532,859	$1,949,339	$464,082,851

SCHEDULE F.

Statement of the Values of the several classes of Property in the Counties of the State, after the Percentage of Increase had been added by Auditors, for 1881.

COUNTIES.	The Value of Real Estate.	The Value of Improvements on Real Estate.	The Value of Personal Property exclusive of Money.	The Amount of Money.	Total of Preceding Columns.	Value of Railroads Assessed by State Board of Equalization.	The Total Value of all Property.
Alameda	$30,168,311	$11,377,939	$5,029,505	$87,235	$46,662,989	$2,240,681	$48,903,670
Alpine	137,583	83,270	85,670	5,477	312,007	----------------	312,007
Amador	1,235,171	1,078,307	786,254	22,316	3,122,048	81,600	3,203,648
Butte	7,301,710	1,580,842	2,582,231	121,356	11,586,139	1,212,029	12,798,168
Calaveras	1,206,904	563,144	871,757	43,200	2,685,005	8,580	2,693,585
Colusa	11,675,445	1,221,037	3,926,182	97,746	16,920,410	621,000	17,541,410
Contra Costa	5,147,447	946,710	1,855,424	54,938	8,004,519	753,825	8,758,344
Del Norte	275,336	227,534	279,363	20,616	802,849	----------------	802,849
El Dorado	964,824	788,785	860,665	93,475	2,707,749	187,518	2,895,267
Fresno	4,252,992	633,319	2,075,018	35,126	6,996,455	1,822,345	8,818,800
Humboldt	3,284,779	1,233,051	1,596,920	124,800	6,239,550	----------------	6,239,550
Inyo	304,147	321,413	425,014	7,021	1,057,595	----------------	1,057,595
Kern	2,034,646	501,479	1,498,232	50,170	4,084,527	1,944,195	6,028,722
Lake	1,270,744	554,132	543,792	31,740	2,400,408	----------------	2,400,408
Lassen	433,889	238,675	531,434	11,355	1,215,353	----------------	1,215,353
Los Angeles	10,895,014	3,654,325	3,233,407	119,625	17,902,371	2,301,420	20,203,791
Marin	5,091,762	1,268,564	1,341,472	14,183	7,715,981	541,682	8,257,663
Mariposa	746,652	361,567	491,354	26,848	1,626,421	----------------	1,626,421
Mendocino	3,058,684	1,117,169	1,821,343	119,818	6,117,014	----------------	6,117,014
Merced	3,620,046	535,831	1,544,800	27,918	5,728,595	918,750	6,647,345
Modoc	579,709	395,229	810,201	8,131	1,793,270	----------------	1,793,270
Mono	1,611,616	740,335	744,013	39,658	3,135,622	----------------	3,135,622
Monterey	4,863,573	927,978	1,616,777	28,805	7,437,133	818,341	8,255,474
Napa	4,419,710	2,028,077	1,916,707	116,053	8,480,547	676,500	9,157,047
Nevada	4,228,864	1,864,263	1,647,065	143,145	7,883,337	925,270	8,808,607
Placer	2,892,348	1,345,700	1,653,650	143,993	6,035,691	2,852,230	8,887,921
Plumas	990,748	565,245	559,114	79,607	2,194,714	----------------	2,194,714
Sacramento	9,643,370	5,848,305	4,991,755	259,240	20,742,670	1,524,579	22,267,249
San Benito	2,434,687	471,995	900,479	13,350	3,820,511	291,225	4,111,736
San Bernardino	1,657,421	615,223	713,556	80,765	3,066,965	900,900	3,967,865
San Diego	3,012,211	466,868	817,110	11,769	4,307,958	2,621,025	6,928,983
San Francisco	122,493,680	45,702,139	61,013,470	9,831,992	239,041,281	221,440	239,262,721

San Joaquin	17,267,287	3,399,507	5,741,545	181,375	26,589,714	1,947,280	28,536,994
San Luis Obispo	2,756,424	650,498	1,571,566	50,675	5,029,163		5,029,163
San Mateo	4,590,294	1,482,054	1,201,200	63,055	7,336,603	414,150	7,750,753
Santa Barbara	3,253,240	893,942	1,259,225	40,650	5,447,057		5,447,057
Santa Clara	14,774,009	5,123,384	4,495,426	241,531	24,634,350	1,382,777	26,017,127
Santa Cruz	3,524,030	1,157,385	839,085	98,005	5,618,505	207,405	5,825,910
Shasta	870,947	441,588	886,821	59,434	2,258,790	470,000	2,728,790
Sierra	729,721	378,825	421,624	28,825	1,558,995	53,750	1,612,745
Siskiyou	1,246,410	727,641	1,473,020	90,934	3,538,005		3,538,005
Solano	7,061,479	1,630,217	2,374,704	48,382	11,114,782	1,029,925	12,144,707
Sonoma	10,164,279	3,641,559	3,645,720	259,655	17,711,213	1,179,768	18,890,981
Stanislaus	7,169,333	982,351	2,469,926	81,816	10,703,426	710,830	11,414,256
Sutter	2,769,076	426,637	1,133,035	34,433	4,363,181	250,000	4,613,181
Tehama	3,920,273	690,793	1,438,272	69,961	6,119,299	1,013,500	7,132,799
Trinity	513,554	126,786	405,016	28,715	1,074,071		1,074,071
Tulare	3,915,347	720,706	1,803,449	62,571	6,502,073	1,338,920	7,840,993
Tuolumne	714,025	608,658	596,739	37,915	1,957,337		1,957,337
Ventura	1,938,225	402,989	961,283	45,290	3,347,787		3,347,787
Yolo	8,028,229	1,408,006	3,215,317	117,938	12,769,490	897,450	13,666,940
Yuba	1,729,605	1,061,065	1,484,265	84,935	4,359,870	468,774	4,828,644
Totals	$348,869,810	$115,213,041	$146,180,978	$13,597,566	$623,861,395	$34,829,664	$658,691,059

SCHEDULE G.

Showing Values of Real Estate other than City and Town Lots, City and Town Lots, and the Improvements thereon, as Assessed for 1881 *by Assessors, before the Increase by the Board.*

COUNTIES.	Value of Real Estate other than city and town lots.	Value of Improvements thereon.	Value of City and Town Lots.	Value of Improvements thereon.	Value of Improvements on Real Estate assessed to persons other than owners of the Real Estate.	Total Value.
Alameda	$10,924,306	$1,667,384	$16,753,044	$8,696,909	$74,183	$38,115,826
Alpine	129,797	67,980	7,786	15,290		220,853
Amador	1,004,659	574,325	118,224	388,759	17,195	2,103,162
Butte	6,840,598	671,499	461,112	803,392	105,951	8,882,552
Calaveras	1,162,062	356,333	44,842	176,855	29,956	1,770,048
Colusa	11,450,955	685,809	224,490	487,540	47,688	12,896,482
Contra Costa	4,970,519	666,709	176,928	272,251	7,750	6,094,157
Del Norte	243,816	117,659	31,520	89,950	19,925	502,870
El Dorado	853,789	425,440	111,035	271,410	91,935	1,753,609
Fresno	4,131,475	318,269	121,517	195,011	120,039	4,886,311
Humboldt	2,783,296	548,842	501,483	661,439	22,770	4,517,830
Inyo	279,682	226,830	24,465	87,815	6,768	625,560
Kern	1,934,343	354,510	100,303	133,717	13,252	2,536,125
Lake	1,210,635	409,010	60,109	138,377	6,745	1,824,876
Lassen	408,369	189,545	25,520	49,130		672,564
Los Angeles	7,223,967	1,157,466	3,671,047	2,447,814	49,045	14,549,339
Marin	3,833,644	558,950	795,231	570,465	23,825	5,782,115
Mariposa	733,762	273,079	12,890	60,995	27,493	1,108,219
Mendocino	2,943,231	806,861	115,453	298,732	11,576	4,175,853
Merced	3,476,281	291,081	143,765	220,941	23,809	4,155,877
Modoc	558,289	288,376	21,420	101,906	4,947	974,938
Mono	1,473,979	421,445	137,637	306,294	12,596	2,351,951
Monterey	4,456,411	554,643	407,162	341,730	31,605	5,791,551
Napa	3,795,224	1,174,648	624,486	837,909	15,520	6,447,787
Nevada	3,897,689	754,263	331,175	1,029,225	80,775	6,093,127
Placer	2,734,764	559,887	157,588	446,918	338,891	4,238,048
Plumas	959,772	414,202	30,976	141,773	9,270	1,555,993
Sacramento	6,207,490	924,215	3,435,880	4,890,415	33,675	15,491,675
San Benito	2,313,262	275,815	121,425	184,710	11,470	2,906,682
San Bernardino	1,519,725	433,388	137,696	175,279	6,556	2,272,644

San Diego	1,593,023	137,565	1,419,188	321,033	8,270	3,479,079
San Francisco	1,055,809	58,300	112,364,265	42,208,995	49,500	155,736,869
San Joaquin	14,991,686	1,022,886	2,275,601	2,321,341	55,280	20,666,794
San Luis Obispo	2,511,324	320,734	245,100	247,790	81,974	3,406,922
San Mateo	3,502,985	1,080,525	322,260	149,155	5,365	5,060,290
Santa Barbara	2,377,751	322,867	451,154	537,168	33,907	3,722,847
Santa Clara	9,794,079	1,906,724	4,979,930	3,190,390	26,270	19,897,393
Santa Cruz	2,697,120	426,400	826,910	730,985	----------------	4,681,415
Shasta	827,809	198,920	43,138	113,490	129,178	1,312,535
Sierra	706,111	205,005	23,610	173,295	525	1,108,546
Siskiyou	1,175,905	459,146	70,505	268,495	----------------	1,974,051
Solano	6,156,730	664,953	568,488	833,529	54,106	8,277,806
Sonoma	8,412,991	1,863,868	1,086,335	1,513,605	25,853	12,902,652
Stanislaus	6,956,293	519,534	213,040	409,790	53,027	8,151,684
Sutter	2,734,851	340,702	34,225	81,555	4,380	3,195,713
Tehama	3,644,313	314,973	275,960	364,320	11,500	4,611,066
Trinity	493,971	102,054	19,583	24,732	----------------	640,340
Tulare	3,755,795	370,705	159,552	257,565	92,436	4,636,053
Tuolumne	625,280	362,877	88,745	241,541	4,240	1,322,683
Ventura	1,746,849	230,129	191,376	164,800	8,060	2,341,214
Yolo	7,653,245	672,346	374,984	702,430	33,230	9,436,235
Yuba	1,355,410	333,285	374,195	721,080	6,700	2,790,670
Totals	$179,225,121	$28,082,961	$155,314,353	$80,100,035	$1,929,011	$444,651,481

SCHEDULE H.

Showing Values of Real Estate and Improvements, Personal Property, Money, and Railways Assessed by the State Board of Equalization and the Total Value of all Property Assessed by Assessors before Increase by Board, for 1881.

COUNTIES.	Value of Real Estate other than City and Town Lots, and of City and Town Lots.	Value of Improvements thereon.	Value of Personal Property, exclusive of Money.	Amount of Money.	Total Value of Preceding Columns.	Value of the Franchise, etc., of Railroads, as apportioned to Counties by the State Board of Equalization.	Total Value of all Property.
Alameda	$27,677,350	$10,438,476	$4,614,624	$87,235	$42,817,285	$2,240,681	$45,057,966
Alpine	137,583	83,270	85,677	5,477	312,007	------	312,007
Amador	1,122,883	980,279	714,776	22,316	2,840,254	81,600	2,921,854
Butte	7,301,710	1,580,842	2,582,231	121,356	11,586,139	1,212,029	12,798,168
Calaveras	1,206,904	563,144	871,757	43,200	2,685,005	8,580	2,693,585
Colusa	11,675,445	1,221,037	3,926,182	97,746	16,920,410	621,000	17,541,410
Contra Costa	5,147,447	946,710	1,855,424	54,938	8,004,519	753,825	8,758,344
Del Norte	275,336	227,534	279,363	20,616	802,849	------	802,849
El Dorado	964,824	788,785	860,665	93,475	2,707,749	187,518	2,895,267
Fresno	4,252,992	633,319	2,075,018	35,126	6,996,455	1,822,345	8,818,800
Humboldt	3,284,779	1,233,051	1,596,920	124,800	6,239,550	------	6,239,550
Inyo	304,147	321,413	425,014	7,021	1,057,595	------	1,057,595
Kern	2,034,646	501,479	1,498,232	50,170	4,084,527	1,944,195	6,028,722
Lake	1,270,744	554,132	543,792	31,740	2,400,408	------	2,400,408
Lassen	433,889	238,675	531,434	11,355	1,215,353	------	1,215,353
Los Angeles	10,895,014	3,654,325	3,233,407	119,625	17,902,371	2,301,420	20,203,791
Marin	4,628,875	1,153,240	1,219,520	14,183	7,015,818	541,682	7,557,500
Mariposa	746,652	361,567	491,354	26,848	1,626,421	------	1,626,421
Mendocino	3,058,684	1,117,169	1,821,343	119,818	6,117,014	------	6,117,014
Merced	3,620,046	535,831	1,544,800	27,918	5,728,595	918,750	6,647,345
Modoc	579,709	395,229	810,201	8,131	1,793,270	------	1,793,270
Mono	1,611,616	740,335	744,013	39,658	3,135,622	------	3,135,622
Monterey	4,863,573	927,978	1,616,777	28,805	7,437,133	818,341	8,255,474
Napa	4,419,710	2,028,077	1,916,707	116,053	8,480,547	676,500	9,157,047
Nevada	4,228,864	1,864,263	1,647,065	143,145	7,883,337	925,270	8,808,607
Placer	2,892,352	1,345,696	1,653,650	143,993	6,035,691	2,852,230	8,887,921
Plumas	990,748	565,245	559,114	79,607	2,194,714	------	2,194,714
Sacramento	9,643,370	5,848,305	4,991,755	259,240	20,742,670	1,524,579	22,267,249
San Benito	2,434,687	471,995	900,479	13,350	3,820,511	291,225	4,111,736
San Bernardino	1,657,421	615,223	713,556	80,765	3,066,965	900,900	3,967,865

San Diego	3,012,211	466,868	817,110	11,769	4,307,958	2,621,025	6,928,983
San Francisco	113,420,074	42,316,795	56,493,954	9,831,992	222,062,815	221,440	222,284,255
San Joaquin	17,267,287	3,399,507	5,741,545	181,375	26,589,714	1,947,280	28,536,994
San Luis Obispo	2,756,424	650,498	1,571,566	50,675	5,029,163	----------------	5,029,163
San Mateo	3,825,245	1,235,045	1,001,000	63,055	6,124,345	414,150	6,538,495
Santa Barbara	2,828,905	893,942	1,259,225	40,650	5,022,722	----------------	5,022,722
Santa Clara	14,774,009	5,123,384	4,495,426	241,531	24,634,350	1,382,777	26,017,127
Santa Cruz	3,524,030	1,157,385	839,085	98,005	5,618,505	207,405	5,825,910
Shasta	870,947	441,588	886,821	59,434	2,258,790	470,000	2,728,790
Sierra	729,721	378,825	421,624	28,825	1,558,995	53,750	1,612,745
Siskiyou	1,246,410	727,641	1,473,020	90,934	3,538,005	----------------	3,538,005
Solano	6,725,218	1,552,588	2,261,623	48,382	10,587,811	1,029,925	11,617,736
Sonoma	9,499,326	3,403,326	3,407,215	259,655	16,569,522	1,179,768	17,749,290
Stanislaus	7,169,333	982,351	2,469,926	81,816	10,703,426	710,830	11,414,256
Sutter	2,769,076	426,637	1,133,035	34,433	4,363,181	250,000	4,613,181
Tehama	3,920,273	690,793	1,438,272	69,961	6,119,299	1,013,500	7,132,799
Trinity	513,554	126,786	405,016	28,715	1,074,071	----------------	1,074,071
Tulare	3,915,347	720,706	1,803,449	62,571	6,502,073	1,338,920	7,840,993
Tuolumne	714,025	608,658	596,739	37,915	1,957,337	----------------	1,957,337
Ventura	1,938,225	402,989	961,283	45,290	3,347,787	----------------	3,347,787
Yolo	8,028,229	1,408,006	3,215,317	117,938	12,769,490	897,450	13,666,940
Yuba	1,729,605	1,061,065	1,484,265	84,935	4,359,870	468,774	4,828,644
Totals	$334,539,474	$110,112,007	$140,500,966	$13,597,566	$598,750,013	$34,829,664	$633,579,677

SCHEDULE I.

Showing from Statements of Railroad Corporations the Amount of Rolling Stock owned by them in 1881.

RAILROADS.	Locomotives	Sleeping Cars	Passenger Cars	Emigrant and Smoking Cars	Baggage, Express, and Mail Cars	Caboose Cars	Box Freight Cars	Flat Freight Cars	Dump, Hand, and Section Cars
Amador Branch									
California Northern	2		2		1		6	5	2
California Pacific	12		12	4	6	1	37	152	70
Central Pacific	122	12	87	65	32	44	1,629	1,290	360
Northern Railway									
Sacramento and Placerville	4		6		2		34	40	13
San Francisco and North Pacific	7	1	9		3		32	110	51
San Pablo and Tulare									
Southern Pacific	48	1	43	31	13	6	563	367	223
Stockton and Copperopolis	3		3		1		4	41	9
Vaca Valley and Clear Lake	2		1		1		5	15	8
Nevada County Narrow Gauge	3		2		2		18	20	3
North Pacific Coast	11	1	12	4	3		30	254	12
South Pacific Coast	12		20	1	7	4	55	210	24
Santa Cruz	3		3				5	28	7
Totals	229	15	210	105	71	55	1,418	2,532	782

SCHEDULE J.

Showing Assessed Value per Mile of Franchise, Roadway, Roadbed, Rails, and Rolling Stock of Railroads Assessed by the Board in 1881.

NAME OF COMPANY.	Number of Miles.	Franchise.	Roadway.	Roadbed.	Rails.	Rolling Stock.	Total Value per Mile.
Amador Branch	27.00	$600	$600	$4,000	$5,000		$10,200
California Northern	26.50	2	500	2,350	2,500	$650	6,002
California Pacific	112.50	2,000	1,000	5,000	6,000	2,500	16,500
Central Pacific	602.22	2,500	1,000	9,000	6,500	6,000	25,000
Northern Railway	114.30	2,000	1,000	4,500	6,000		13,500
Sacramento and Placerville	48.50	1	600	3,500	4,400	1,500	10,001
San Francisco and North Pacific	93.00	2,000	1,000	3,500	5,000	2,500	14,000
San Pablo and Tulare	46.00	1,000	1,000	4,000	6,000		12,000
Southern Pacific	711.51	2,000	1,000	5,500	6,000	2,000	16,500
Stockton and Copperopolis	44.63	1,000	1,000	4,500	5,000	1,500	13,000
Vaca Valley and Clear Lake	29.75	300	500	3,000	3,500	1,000	8,300
Nevada County Narrow Gauge	22.50	600	200	3,000	3,200	2,000	9,000
North Pacific Coast	76.25	1	400	1,000	2,600	1,500	5,501
South Pacific Coast	45.30	1	500	1,500	3,000	2,000	7,001
Santa Cruz	21.16	1	500	1,000	2,000	1,000	4,501

SCHEDULE K.

Showing Assessment of Railroads Assessed by the State Board of Equalization in 1881.

Name of Company.	Franchise.	Roadway.	Roadbed.	Rails.	Rolling Stock.	Total Assessment.
Amador Branch	$16,200	$16,200	$108,000	$135,000	----------	$275,400
California Northern	53	13,250	62,275	66,250	$17,225	159,053
California Pacific	225,000	112,500	562,500	675,000	675,000	1,856,250
Central Pacific	1,505,550	602,220	5,419,980	3,914,430	3,613,320	15,055,500
Northern Railway	228,600	114,300	514,350	685,800	----------	1,543,050
Sacramento and Placerville	48	29,100	169,750	213,400	72,750	485,048
San Francisco and North Pacific	186,000	93,000	325,500	465,000	232,500	1,302,000
San Pablo and Tulare	46,000	46,000	184,000	276,000	----------	552,000
Southern Pacific	1,423,020	711,510	3,913,305	4,269,060	1,423,020	11,739,915
Stockton and Copperopolis	44,630	44,630	200,835	223,150	66,945	580,190
Vaca Valley and Clear Lake	8,925	14,875	89,250	104,125	29,750	246,925
Nevada County Narrow Gauge	13,500	4,500	67,500	72,000	45,000	202,500
North Pacific Coast	76	30,500	76,250	198,250	114,375	419,451
South Pacific Coast	45	22,650	67,950	135,900	90,600	317,145
Santa Cruz	21	10,580	21,160	42,320	21,160	95,241
Totals	$3,697,668	$1,865,815	$11,782,605	$11,475,685	$6,007,895	$34,829,668

SCHEDULE L.

Showing Apportionment of the Assessment of Railroads among Counties entitled to same, for 1881.

Name of Railroad and Counties Receiving Apportionment.	Number of Miles in County.	Value Per Mile of Railroad.	Apportionment to each County.
Amador Branch		$10,200	
Amador	8.00		$81,600
Sacramento	19.00		193,800
California Northern		6,002	
Butte	14.50		87,029
Yuba	12.00		72,024
California Pacific		16,500	
Sacramento	.50		8,250
Solano	40.00		660,000
Napa	41.00		676,500
Yolo	31.00		511,500
Central Pacific		25,000	
San Francisco	4.00		100,000
Alameda	83.52		2,088,000
Santa Clara	8.50		212,500
San Joaquin	56.75		1,418,750
Sacramento	41.00		1,025,000
Placer	112.75		2,818,750
Nevada	30.28		756,250
Sierra	2.15		53,750
Yuba	15.87		396,750
Sutter	10.00		250,000
Butte	45.00		1,125,000
Tehama	40.54		1,013,500
Shasta	18.80		470,000
Stanislaus	22.63		565,750
Merced	36.75		918,750
Fresno	61.06		1,526,500
Tulare	12.65		316,215
Northern Railway		13,500	
Alameda	6.85		92,475
Contra Costa	23.75		320,625
Solano	16.95		228,825
Yolo	20.75		280,125
Colusa	46.00		621,000
Sacramento and Placerville		10,001	
Sacramento	29.75		297,529
El Dorado	18.75		187,518
San Francisco and North Pacific		14,000	
Sonoma	77.00		1,078,000
Marin	16.00		224,000
San Pablo and Tulare		12,000	
San Joaquin	8.50		102,000
Alameda	1.40		16,800
Contra Costa	36.10		433,200
Southern Pacific		16,500	
San Francisco	7.36		121,400
San Mateo	25.10		414,150
Santa Clara	59.30		978,450
Santa Cruz	2.15		35,475
San Benito	17.65		291,225
Monterey	49.28		813,120
Fresno	17.93		295,845
Tulare	61.98		1,022,670
Kern	117.83		1,944,195
Los Angeles	139.48		2,301,420
San Bernardino	54.60		900,900
San Diego	158.85		2,621,025
Stockton and Copperopolis		13,000	
San Joaquin	32.81		426,530
Stanislaus	11.16		145,080
Calaveras	.66		8,580

SCHEDULE L—Continued.

Name of Railroad and Counties Receiving Apportionment.	Number of Miles in County.	Value per Mile of Railroad.	Apportionment to each County.
Vaca Valley and Clear Lake		$8,300	
Yolo	12.75		$105,825
Solano	17.00		141,100
Nevada County Narrow Gauge		9,000	
Placer	3.72		33,480
Nevada	18.78		169,020
North Pacific Coast		5,501	
Marin	57.75		317,682
Sonoma	18.50		101,768
South Pacific Coast		7,001	
Alameda	6.20		43,406
Santa Clara	27.40		191,827
Santa Cruz	11.70		81,911
Santa Cruz		4,501	
Santa Cruz	20.00		90,119
Monterey	1.16		5,221

SCHEDULE M.

Showing the Amount each County Received in the Apportionment of Railroad Assessments in 1881.

Counties.	Amounts.	Counties.	Amounts.
Alameda	$2,240,681	San Bernardino	$900,900
Amador	81,600	San Diego	2,621,025
Butte	1,212,029	San Francisco	221,440
Calaveras	8,580	San Joaquin	1,947,280
Colusa	621,000	San Mateo	414,150
Contra Costa	753,825	Santa Clara	1,382,777
El Dorado	187,518	Santa Cruz	207,405
Fresno	1,822,345	Shasta	470,000
Kern	1,944,195	Sierra	53,750
Los Angeles	2,301,420	Solano	1,029,925
Marin	541,682	Sonoma	1,179,768
Merced	918,750	Stanislaus	710,830
Monterey	818,341	Sutter	250,000
Napa	676,500	Tehama	1,013,500
Nevada	925,270	Tulare	1,338,920
Placer	2,852,230	Yolo	897,450
Sacramento	1,524,579	Yuba	468,774
San Benito	291,225		
		Total	$34,829,664

Note.—The statement of each railroad was made separately to each Assessor, omitting the fractions of a dollar, which accounts for the discrepancy of $4 between the above total and the total of the assessment.

Statistics for 1882.

SCHEDULE A.

Summarized Statement of the Reports of the Auditors of the several Counties, showing the Total Value of all Property upon which the State Tax was Levied for 1882.

COUNTIES.	Value of Property.	COUNTIES.	Value of Property.
Alameda	$45,801,464	Sacramento	$20,623,034
Alpine	310,058	San Benito	4,149,939
Amador	2,858,185	San Bernardino	3,925,343
Butte	12,358,099	San Diego	7,080,955
Calaveras	2,621,869	San Francisco	201,982,162
Colusa	17,442,318	San Joaquin	28,114,757
Contra Costa	8,596,539	San Luis Obispo	5,178,526
Del Norte	862,690	San Mateo	8,030,894
El Dorado	2,918,768	Santa Barbara	5,094,143
Fresno	8,298,097	Santa Clara	26,018,176
Humboldt	6,395,079	Santa Cruz	5,613,498
Inyo	1,086,831	Shasta	2,540,276
Kern	5,431,691	Sierra	1,685,368
Lake	2,293,827	Siskiyou	3,476,691
Lassen	1,405,519	Solano	11,787,656
Los Angeles	20,916,835	Sonoma	18,062,610
Marin	7,581,665	Stanislaus	10,620,719
Mariposa	1,503,683	Sutter	4,256,632
Mendocino	6,262,449	Tehama	6,837,502
Merced	6,234,800	Trinity	1,126,326
Modoc	1,750,000	Tulare	7,997,616
Mono	2,896,148	Tuolumne	1,991,897
Monterey	8,144,184	Ventura	3,171,126
Napa	9,136,515	Yolo	13,207,022
Nevada	7,695,149	Yuba	4,301,492
Placer	7,738,524		
Plumas	2,046,635	Total	$607,461,981

SCHEDULE B.

Statement Showing Amounts to be Raised, and Rate of State Taxes for the Thirty-fourth Fiscal Year ending June 30, 1883, *Levied in* 1882.

Amounts be to raised:	
For the General Fund	$1,488,735
For the School Fund	1,300,000
For the Interest and Sinking Fund	398,000
Total	$3,186,735
Taxable property	$607,461,981
Deducting 12 per cent for delinquencies	72,895,437
Leaves as basis of taxation	$524,566,544
Amount of State tax on each $100 to raise $3,186,735	59.6 cents.
Apportioned as follows:	
For the General Fund	27.6 cents.
For the School Fund	24.3 cents.
For the Interest and Sinking Fund	7.5 cents.

NOTE.—The total of the taxable property does not equal the total in schedule, because, as the Auditor of Modoc County did not send his report in time, the Board estimated the value of property in Modoc County to be $1,750,000, whereas afterwards the report of the Auditor showed it to be $1,760,931, and the Sonoma County Auditor afterwards corrected a mistake of $150 in his report, creating thereby a discrepancy of $10,781 between the amount upon which the tax was levied and the amount upon which the taxes were paid.

SCHEDULE C.

Showing Amount of Rolling Stock Owned by Railroads Assessed by the Board in 1882.

	Locomotives	Sleepers	Passenger Cars	Emigrant and Smoking Cars	Baggage and Express Cars	Cabooses	Box Cars	Flat Frei ht Cars	Dump, Hand, and Section Cars	Other Stock
Amador Branch										
California Northern	2		2		1		6	5	4	
California Pacific	12		12	4	6	1	37	152	68	
Central Pacific	149	12	103	43	34	54	1,600	1,300	374	38
Northern Railway										
Sacramento & Placerville	3		1		1		31	34	18	
S. F. and North Pacific	8	1	9		3	2	40	142	32	2
San Pablo & Tulare										
Southern Pacific	45	1	50	22	15	5	564	368	247	
Stockton & Copperopolis	3		3		1		4	41	7	
Vaca Valley & Clear Lake	2		1		1		5	15	8	
Nevada Co. Narrow Gauge	3		2		2		19	19	5	
North Pacific Coast	11	1	12	4	3		30	254	12	
South Pacific Coast	12		41	2	7	2	70	235	22	
Santa Cruz	3		2	1	1		4	33	7	
Totals	253	15	238	76	75	64	2,410	2,598	804	40

SCHEDULE D.

Showing Assessed Value per Mile of Roadway, Roadbed, Rails, and Franchise of Railroads Assessed by State Board of Equalization for 1882.

NAME OF RAILROAD.	Number of Miles.	Franchise.	Roadway.	Roadbed.	Rails.	Rolling Stock.	Total Value per Mile.
Amador Branch	27.00	$1 00	$500 00	$1,500 00	$4,000 00	----------	$6,001 00
California Northern	26.50	1 00	500 00	1,000 00	2,500 00	$500 00	4,501 00
California Pacific	112.50	1,000 00	500 00	4,500 00	5,000 00	2,000 00	13,000 00
Central Pacific*	602.22	2,385 35	500 00	8,156 04	5,510 48	5,052 39	21,604 26
Northern Railway	114.30	500 00	500 00	4,000 00	5,000 00	----------	10,000 00
Sacramento and Placerville	48.50	1 00	500 00	1,500 00	3,000 00	1,000 00	6,001 00
San Francisco and North Pacific	92.50	1,000 00	500 00	3,500 00	4,500 00	2,500 00	12,000 00
San Pablo and Tulare	46.00	500 00	500 00	4,000 00	5,000 00	----------	10,000 00
Southern Pacific*	714.51	612 55	267 53	4,225 11	5,112 55	1,295 23	11,512 97
Stockton and Copperopolis	44.63	500 00	500 00	2,500 00	4,000 00	1,000 00	8,500 00
Vaca Valley and Clear Lake	29.75	300 00	500 00	3,000 00	3,500 00	1,000 00	8,300 00
Nevada County Narrow Gauge	22.50	300 00	200 00	2,500 00	2,500 00	2,000 00	7,500 00
North Pacific Coast	76.25	1 00	400 00	1,000 00	2,600 00	1,500 00	5,501 00
South Pacific Coast	45.30	1 00	400 00	1,000 00	2,600 00	2,800 00	6,801 00
Santa Cruz	21.16	1 00	500 00	1,000 00	2,000 00	1,000 00	4,501 00

**The Central and Southern Pacific were assessed in Divisions, and the following shows the assessment per mile of each Division of Franchise, Roadway, etc.:*

Central:							
Main Trunk	307.42	$3,000 00	$500 00	$10,000 00	$6,000 00	$75,000 00	$27,000 00
California and Oregon Branch	150.71	1,500 00	500 00	5,500 00	5,000 00	25,000 00	15,000 00
San Joaquin Valley Branch	144.09	2,000 00	500 00	7,000 00	5,000 00	25,000 00	17,000 00
Southern Pacific:							
Northern Division	160.84	1,000 00	500 00	5,000 00	5,500 00	3,000 00	15,000 00
Southern Division	553.67	5,000 00	500 00	4,000 00	5,000 00	800 00	10,500 00

SCHEDULE E.

Showing Assessment of Franchise, Roadway, Roadbed, Rails, and Rolling Stock of Railroads Assessed by State Board of Equalization for 1882.

NAME OF RAILROAD.	Value of Franchise.	Value of Roadway.	Value of Roadbed.	Value of Rails.	Value of Rolling Stock.	Total Assessment.
Amador Branch	$27	$13,500	$40,500	$108,000	--------------	$162,027
California Northern	26	13,250	26,500	66,250	$13,250	119,276
California Pacific	112,500	56,250	506,250	562,500	225,000	1,462,500
Central Pacific*	1,436,505	301,110	4,911,735	3,318,520	3,042,650	13,010,520
Northern Railway	57,150	57,150	457,200	571,500	--------------	1,143,000
Sacramento and Placerville	48	24,250	72,750	145,500	48,500	291,048
San Francisco and North Pacific	92,500	46,250	323,750	416,250	231,250	1,110,000
San Pablo and Tulare	23,000	23,000	184,000	230,000	--------------	460,000
Southern Pacific*	437,675	191,154	3,018,880	3,652,970	925,456	8,226,135
Stockton and Copperopolis	22,315	22,315	111,575	178,520	44,630	379,355
Vaca Valley and Clear Lake	8,925	14,875	89,250	104,125	29,750	246,925
Nevada County Narrow Gauge	6,750	4,500	56,250	56,250	45,000	168,750
North Pacific Coast	76	30,500	76,250	198,250	114,375	419,451
South Pacific Coast	45	18,120	45,300	117,780	126,840	308,085
Santa Cruz	21	10,580	21,160	42,320	21,160	95,241
Totals	$2,197,563	$826,804	$9,941,350	$9,768,735	$4,867,841	$27,602,313
**The Central and Southern being assessed in Divisions, the following shows the assessment of each Division:*						
Central Pacific:						
Main Trunk	$922,260	$153,710	$3,074,200	$1,844,520	$2,305,650	$8,300,340
California and Oregon Branch	226,065	75,355	828,905	753,550	376,775	2,260,650
San Joaquin Valley Branch	288,180	72,045	1,008,630	720,450	360,225	2,449,530
Southern Pacific:						
Northern Division	160,840	80,420	804,200	884,620	482,520	2,412,600
Southern Division	276,835	110,734	2,214,680	2,768,350	442,936	5,813,535

SCHEDULE F.

Showing Apportionment of the Assessment of Railroads among Counties entitled to same for 1882.

Name of Railroad and County receiving Apportionment.	Number of Miles in County.	Value per Mile.	Apportionment to each County.
Amador Branch		$6,001	
Amador	8.00		$48,008
Sacramento	19.00		114,019
California Northern		4,501	
Butte	14.50		65,264
Yuba	12.00		54,012
California Pacific		13,000	
Napa	41.00		533,000
Solano	40.00		520,000
Sacramento	.50		6,500
Yolo	31.00		403,000
Central Pacific (Main Trunk)		27,000	
Alameda	83.52		2,255,040
Nevada	30.25		816,750
Placer	92.25		2,490,750
Sacramento	41.00		1,107,000
San Francisco	4.00		108,000
San Joaquin	45.75		1,235,250
Santa Clara	8.50		229,500
Sierra	2.15		58,050
Central Pacific (California and Oregon Branch)		15,000	
Butte	45.00		675,000
Placer	20.50		307,500
Shasta	18.80		282,000
Sutter	10.00		150,000
Tehama	40.54		608,100
Yuba	15.87		238,050
Central Pacific (San Joaquin Valley Branch)		17,000	
Fresno	61.06		1,038,020
Merced	36.75		624,750
San Joaquin	11.00		187,000
Stanislaus	22.63		384,710
Tulare	12.65		215,050
Northern Railway		10,000	
Alameda	6.85		68,500
Colusa	46.00		460,000
Contra Costa	23.75		237,500
Solano	16.75		169,500
Yolo	20.75		207,500
Sacramento and Placerville		6,001	
El Dorado	18.75		112,518
Sacramento	29.75		178,530
San Francisco and North Pacific		12,000	
Marin	16.85		202,200
Sonoma	75.65		907,800
San Pablo and Tulare		10,000	
Alameda	1.40		14,000
Contra Costa	36.10		361,000
San Joaquin	8.50		85,000
Southern Pacific (Northern Division)		15,000	
Monterey	49.28		739,200
San Benito	17.65		264,750
San Francisco	7.36		110,400
San Mateo	25.10		376,500
Santa Clara	59.30		889,500
Santa Cruz	2.15		32,250

SCHEDULE F—Continued.

NAME OF RAILROAD AND COUNTY RECEIVING APPORTIONMENT.	Number of Miles in County.	Value per Mile.	Apportionment to each County.
Southern Pacific (Southern Division)		$10,500	
Fresno	$17.93		$188,265
Kern	117.83		1,237,215
Los Angeles	142.48		1,496,040
San Bernardino	54.60		573,300
San Diego	158.85		1,667,925
Tulare	61.98		650,790
Stockton and Copperopolis		8,500	
Calaveras	.66		5,610
San Joaquin	32.81		278,885
Stanislaus	11.16		94,860
Vaca Valley and Clear Lake		8,300	
Solano	17.00		141,100
Yolo	12.75		105,825
Nevada County Narrow Gauge		7,500	
Nevada	18.78		140,850
Placer	3.72		27,900
North Pacific Coast		5,501	
Marin	57.75		317,683
Sonoma	18.50		101,768
South Pacific Coast		6,801	
Alameda	6.20		42,166
Santa Clara	27.40		186,347
Santa Cruz	11.70		79,572
Santa Cruz		4,501	
Monterey	1.16		5,221
Santa Cruz	20.00		90,020

SCHEDULE G.

Showing the Apportionment of Assessments of Railroads to the several Counties for 1882.

COUNTIES.	Amounts.	COUNTIES.	Amounts.
Alameda	$2,379,706	San Diego	$1,667,925
Amador	48,008	San Francisco	218,400
Butte	740,264	San Joaquin	1,786,135
Calaveras	5,610	San Mateo	376,500
Colusa	460,000	Santa Clara	1,305,347
Contra Costa	598,500	Santa Cruz	201,842
El Dorado	112,518	Shasta	282,000
Fresno	1,226,285	Sierra	58,050
Kern	1,237,215	Solano	830,600
Los Angeles	1,496,040	Sonoma	1,009,568
Marin	519,883	Stanislaus	479,570
Merced	624,750	Sutter	150,000
Monterey	744,421	Tehama	608,100
Napa	533,000	Tulare	865,840
Nevada	957,600	Yolo	716,325
Placer	2,826,150	Yuba	292,062
Sacramento	1,406,049		
San Benito	264,750	Total	$27,602,313
San Bernardino	573,300		

SCHEDULE H.

Showing Values of Real Estate other than City Lots, City and Town Lots, and Improvements, for 1882.

Counties.	Value of Real Estate other than City and Town Lots.	Value of Improvements.	Value of City and Town Lots.	Value of Improvements.	Value of Improvements on Real Estate assessed to persons other than owners of the real estate.	Total Value.
Alameda	$10,989,123	$1,812,245	$16,809,386	$9,179,808	$69,320	$38,859,882
Alpine	136,823	64,299	6,282	14,790	--------	222,194
Amador	887,309	676,368	124,646	401,589	19,891	2,109,803
Butte	7,114,270	685,150	491,810	848,965	47,290	9,187,485
Calaveras	1,182,217	347,370	43,499	174,075	19,275	1,766,436
Colusa	11,807,832	749,060	223,786	539,795	36,145	13,356,618
Contra Costa	5,023,462	763,862	183,958	323,301	55,642	6,350,225
Del Norte	292,894	121,073	30,335	95,305	11,225	550,832
El Dorado	923,395	445,755	104,920	294,565	85,095	1,853,730
Fresno	4,219,644	419,932	228,511	286,805	108,297	5,263,189
Humboldt	2,940,840	442,052	494,980	674,747	20,915	4,573,534
Inyo	275,971	232,870	29,165	98,865	3,530	640,401
Kern	2,022,413	295,948	102,485	146,295	--------	2,567,141
Lake	1,053,866	434,545	58,276	129,730	6,065	1,682,482
Lassen	504,304	227,829	29,345	58,585	--------	820,063
Los Angeles	7,713,025	1,381,477	4,535,594	2,349,804	47,995	16,027,895
Marin	3,870,013	559,500	817,665	615,140	25,925	5,888,243
Mariposa	639,871	240,275	13,190	61,425	26,530	981,291
Mendocino	2,928,169	771,428	129,019	335,513	16,305	4,180,434
Merced	3,465,042	294,168	147,155	227,450	98,917	4,232,732
Modoc	497,601	264,346	21,116	107,801	4,603	895,467
Mono	1,383,126	295,810	82,213	369,260	38,930	2,169,339
Monterey	4,449,906	534,669	422,295	356,355	19,745	5,782,970
Napa	3,839,645	1,234,497	619,104	864,781	16,015	6,574,042
Nevada	2,891,994	780,020	333,487	1,021,853	81,665	5,109,019
Placer	1,858,940	765,715	146,977	514,631	112,292	3,398,555
Plumas	839,129	354,310	34,192	148,652	91,050	1,467,333
Sacramento	5,466,805	941,240	3,150,465	4,954,170	34,835	14,547,515
San Benito	2,305,247	270,185	126,975	194,105	11,100	2,907,612
San Bernardino	1,600,590	501,577	154,492	200,694	8,840	2,466,193
San Diego	2,177,230	157,761	1,513,334	427,936	24,180	4,300,441

San Francisco	960,180	69,060	107,526,868	43,053,160	48,500	151,657,768
San Joaquin	15,255,136	1,044,415	2,378,937	2,567,590	36,340	21,282,418
San Luis Obispo	2,560,463	464,745	241,110	257,010	43,675	3,567,003
San Mateo	3,822,675	1,399,385	340,310	237,900	8,205	5,808,475
Santa Barbara	2,419,479	380,920	442,745	562,665	17,285	3,823,094
Santa Clara	10,227,479	2,044,803	4,868,979	3,155,770	33,395	20,330,426
Santa Cruz	2,616,027	421,755	779,011	736,379	3,165	4,556,337
Shasta	865,791	210,577	48,837	119,487	107,699	1,352,391
Sierra	743,391	193,200	29,305	189,770	1,250	1,156,916
Siskiyou	1,170,099	439,181	69,820	271,702	------------	1,950,802
Solano	6,567,261	708,061	573,785	897,383	50,666	8,797,156
Sonoma	8,728,733	1,981,761	1,117,497	1,623,904	39,335	13,491,230
Stanislaus	6,844,955	517,325	197,795	468,010	57,231	8,085,316
Sutter	2,724,551	328,863	32,570	77,180	4,255	3,167,419
Tehama	3,752,281	342,677	297,489	429,906	31,800	4,854,153
Trinity	414,427	195,479	20,405	62,065	------------	692,376
Tulare	4,067,955	417,940	163,770	298,770	96,166	5,044,601
Tuolumne	638,302	367,825	91,115	261,265	4,570	1,363,077
Ventura	1,724,426	232,095	188,162	179,475	7,284	2,331,442
Yolo	7,744,455	690,055	381,589	746,050	42,480	9,604,629
Yuba	1,289,370	305,070	366,305	905,745	3,325	2,669,815
Totals	$180,438,132	$29,820,528	$151,365,061	$82,917,976	$1,778,243	$446,319,940

SCHEDULE I.

Showing Values of the Several Classes of Property in the State for 1882.

COUNTIES.	Value of all Real Estate.	Value of all Improvements.	Value of Personal Property except Money.	Amount of Money.	Total of Preceding Columns.	Railroads Assessed by State Board of Equalization.	Total Value of all Property.
Alameda	$27,798,509	$11,061,373	$4,488,833	$73,043	$43,421,758	$2,379,706	$45,801,464
Alpine	143,105	79,089	85,284	2,580	310,058	--------------	310,058
Amador	1,011,955	1,097,848	684,786	15,588	2,810,177	48,008	2,858,185
Butte	7,606,080	1,581,405	2,304,897	125,453	11,617,835	740,264	12,358,099
Calaveras	1,225,716	540,720	822,009	27,814	2,616,259	5,610	2,621,869
Colusa	12,031,618	1,325,000	3,400,018	225,682	16,982,318	460,000	17,442,318
Contra Costa	5,207,420	1,142,805	1,566,119	81,695	7,998,039	598,500	8,596,539
Del Norte	323,229	227,603	273,379	38,479	862,690	--------------	862,690
El Dorado	1,028,315	825,415	863,310	89,210	2,806,250	112,518	2,918,768
Fresno	4,448,155	815,034	1,766,598	42,025	7,071,812	1,226,285	8,298,097
Humboldt	3,435,820	1,137,714	1,624,215	197,330	6,395,079	--------------	6,395,079
Inyo	305,136	335,265	441,657	4,773	1,086,831	--------------	1,086,831
Kern	2,124,898	442,243	1,575,866	51,469	4,194,476	1,237,215	5,431,691
Lake	1,112,142	570,340	553,593	57,752	2,293,827	--------------	2,293,827
Lassen	533,649	286,414	576,292	9,164	1,405,519	--------------	1,405,519
Los Angeles	12,248,619	3,779,276	3,255,312	137,588	19,420,795	1,496,040	20,916,835
Marin	4,687,678	1,200,565	1,022,258	151,281	7,061,782	519,883	7,581,665
Mariposa	653,061	328,230	493,018	29,374	1,503,683	--------------	1,503,683
Mendocino	3,057,188	1,123,246	1,950,329	131,686	6,262,449	--------------	6,262,449
Merced	3,612,197	620,535	1,342,347	34,971	5,610,050	624,750	6,234,800
Modoc	518,717	376,750	849,339	16,125	1,760,931	--------------	1,760,931
Mono	1,465,339	704,000	685,467	41,342	2,896,148	--------------	2,896,148
Monterey	4,872,201	910,769	1,585,143	31,650	7,399,763	744,421	8,144,184
Napa	4,458,749	2,115,293	1,955,384	74,089	8,603,515	533,000	9,136,515
Nevada	3,225,481	1,883,538	1,519,750	108,780	6,737,549	957,600	7,695,149
Placer	2,005,917	1,392,638	1,346,731	167,088	4,912,374	2,826,150	7,738,524
Plumas	873,321	594,012	536,917	42,385	2,046,635	--------------	2,046,635
Sacramento	8,617,270	5,930,245	4,456,155	213,315	19,216,985	1,406,049	20,623,034
San Benito	2,432,222	475,390	950,137	27,440	3,885,189	264,750	4,149,939
San Bernardino	1,755,082	711,111	843,713	42,137	3,352,043	573,300	3,925,343
San Diego	3,690,564	609,877	1,101,720	10,869	5,413,030	1,667,925	7,080,955
San Francisco	108,487,048	43,170,720	42,306,636	7,799,358	201,763,762	218,400	201,982,162
San Joaquin	17,634,073	3,648,345	4,922,635	123,569	26,328,622	1,786,135	28,114,757

San Luis Obispo	2,801,573	765,430	1,567,880	43,643	5,178,526	----------	5,178,526
San Mateo	4,162,985	1,645,490	978,520	867,399	7,654,394	376,500	8,030,894
Santa Barbara	2,862,224	960,870	1,243,771	27,278	5,094,143	----------	5,094,143
Santa Clara	15,096,458	5,233,968	4,161,443	220,960	24,712,829	1,305,347	26,018,176
Santa Cruz	3,395,038	1,161,299	826,402	28,917	5,411,656	201,842	5,613,498
Shasta	914,628	437,763	853,216	52,669	2,258,276	282,000	2,540,276
Sierra	772,696	384,220	426,395	44,007	1,627,318	58,050	1,685,368
Siskiyou	1,239,919	710,883	1,398,957	126,932	3,476,691	----------	3,476,691
Solano	7,141,046	1,656,110	2,043,793	116,107	10,957,056	830,600	11,787,656
Sonoma	9,846,230	3,645,000	3,273,651	288,011	17,052,892	1,009,568	18,062,460
Stanislaus	7,042,750	1,042,566	1,966,035	89,798	10,141,149	479,570	10,620,719
Sutter	2,757,121	410,298	902,346	36,867	4,106,632	150,000	4,256,032
Tehama	4,049,770	804,383	1,288,964	86,285	6,229,402	608,100	6,837,502
Trinity	434,832	257,544	396,621	37,329	1,126,326	----------	1,126,326
Tulare	4,231,725	812,876	1,974,932	112,243	7,131,776	865,840	7,997,616
Tuolumne	729,417	633,660	596,697	32,123	1,991,897	----------	1,991,897
Ventura	1,912,588	418,854	773,619	66,065	3,171,126	----------	3,171,126
Yolo	8,126,044	1,478,585	2,752,344	133,724	12,490,697	716,325	13,207,022
Yuba	1,655,675	1,014,140	1,273,020	66,595	4,009,430	292,062	4,301,492
Totals	$331,803,193	$114,516,747	$120,848,453	$12,702,056	$579,870,449	$27,602,313	$607,472,762

SCHEDULE J.

Showing Value of Real Estate subject to Mortgage, Amount of Mortgages, and the Per Cent of the Property subject to Mortgage, for 1882.

COUNTIES.	Value of Mortgages.	Value of Real Property.	Per Cent of Value the Mortgage amounts to.
Alameda	$10,216,833	$38,859,882	26.291
Alpine	6,661	222,194	2.997
Amador	248,434	2,109,803	11.775
Butte	2,361,485	9,187,485	25.703
Calaveras	115,000	1,766,436	6.510
Colusa	2,477,226	13,356,618	18.546
Contra Costa	1,039,355	6,350,225	16.367
Del Norte	81,890	550,832	14.866
El Dorado	247,632	1,853,730	13.358
Fresno	571,666	5,263,189	10.861
Humboldt	916,317	4,573,534	20.035
Inyo	45,858	640,401	7.160
Kern	129,926	2,567,141	5.060
Lake	302,359	1,682,482	17.971
Lassen	136,404	820,063	16.633
Los Angeles	1,501,074	16,027,895	9.365
Marin	1,473,803	5,888,243	26.729
Mariposa	76,074	981,291	7.752
Mendocino	1,026,202	4,180,434	24.547
Merced	917,872	4,232,732	21.685
Modoc	130,862	895,467	14.725
Mono	43,627	2,169,339	2.011
Monterey	792,251	5,782,970	13.699
Napa	1,505,208	6,574,042	22.896
Nevada	452,695	5,109,019	8.860
Placer	518,528	3,398,555	15.254
Plumas	200,733	1,467,333	13.680
Sacramento	2,706,390	14,547,515	18.672
San Benito	664,585	2,907,612	22.856
San Bernardino	291,189	2,466,193	11.807
San Diego	236,122	4,300,441	5.490
San Francisco	28,878,061	151,657,768	19.041
San Joaquin	4,139,978	21,282,418	19.452
San Luis Obispo	512,671	3,567,003	14.372

San Mateo	892,255	5,808,475	15.361
Santa Barbara	604,889	3,823,094	15.821
Santa Clara	3,043,137	20,330,426	14.968
Santa Cruz	855,680	4,556,337	18.779
Shasta	185,160	1,352,391	13.691
Sierra	106,271	1,156,916	9.185
Siskiyou	562,878	1,950,802	28.853
Solano	1,893,530	8,797,156	21.524
Sonoma	2,863,807	13,491,230	21.227
Stanislaus	1,746,318	8,085,316	21.598
Sutter	959,486	3,167,419	30.292
Tehama	973,018	4,854,153	20.045
Trinity	114,476	692,376	16.533
Tulare	553,246	5,044,601	10.967
Tuolumne	132,003	1,363,077	9.684
Ventura	229,241	2,331,442	9.832
Yolo	1,862,265	9,604,629	19.389
Yuba	441,195	2,669,815	16.525
Totals	$82,983,826	$446,319,940	18.592

SCHEDULE K.

Showing Number of Acres of Land Assessed in 1881 *and* 1882, *and Average Value for* 1882, *and the Number of Acres Inclosed and Cultivated in* 1881.

Counties.	Acres in 1881.	Acres in 1882.	Average Value in 1882.	Acres of Land Inclosed in 1881.	Acres of Land Cultivated in 1881.
Alameda	423,629	416,821	$26 36	90,850	153,953
Alpine	37,030	32,134	4 25	3,827	2,045
Amador	187,602	200,402	4 42	60,600	30,300
Butte	700,000	669,826	10 62	308,740	340,400
Calaveras	250,634	280,211	4 21	62,500	50,250
Colusa	1,296,504	1,093,669	10 79	162,420	524,640
Contra Costa	453,397	455,391	11 03	250,794	143,074
Del Norte	63,738	66,562	4 40	20,410	1,752
El Dorado	214,856	207,793	4 44	66,840	9,577
Fresno	1,817,468	1,703,800	2 47	185,000	280,000
Humboldt	777,566	791,859	3 71	70,824	22,311
Inyo	62,093	66,789	4 10	18,300	7,500
Kern	1,114,359	1,117,421	1 80	47,210	32,380
Lake	182,644	200,608	5 25	35,707	12,923
Lassen	130,960	132,180	3 81	--------------	7,073
Los Angeles	1,353,594	1,334,251	5 78	92,000	212,000
Marin	319,802	320,574	12 07	292,867	14,521
Mariposa	567,162	222,013	2 88	32,796	6,668
Mendocino	745,167	774,512	3 78	136,214	60,711
Merced	1,012,694	1,021,323	3 39	169,027	202,539
Modoc	184,135	207,713	2 39	97,180	65,223
Mono	78,340	82,913	16 68	38,450	9,360
Monterey	689,534	901,772	4 93	165,560	145,100
Napa	327,173	326,229	11 76	150,491	55,856
Nevada	205,755	229,526	12 59	35,934	7,010
Placer	330,298	330,655	5 62	12,924	75,070
Plumas	205,337	213,068	3 93	60,000	6,000
Sacramento	605,626	606,759	9 00	326,742	129,284
San Benito	318,813	312,178	7 38	228,000	54,000
San Bernardino	432,748	416,766	3 84	20,205	14,546
San Diego	1,303,325	960,908	2 26	5,162	22,997
San Francisco	26,681	27,000	35 56	6,300	3,000
San Joaquin	858,291	866,835	17 56	380,100	340,000
San Luis Obispo	938,331	944,790	2 71	215,600	74,363

San Mateo	277,258	290,531	13 15	170,000	70,000
Santa Barbara	992,059	981,252	2 46	48,200	88,500
Santa Clara	536,425	558,590	18 30	421,359	243,276
Santa Cruz	256,630	245,253	10 66	87,420	38,190
Shasta	314,997	329,724	2 62	145,337	50,640
Sierra	100,372	84,136	8 83	26,030	2,803
Siskiyou	176,983	191,683	6 10	215,000	24,350
Solano	500,354	501,429	13 09	----------	----------
Sonoma	750,180	753,525	11 58	569,843	222,642
Stanislaus	780,795	763,507	8 96	99,497	459,835
Sutter	376,491	372,082	7 32	122,006	61,214
Tehama	891,145	898,712	4 17	149,550	275,250
Trinity	76,523	92,465	4 48	6,000	3,000
Tulare	1,157,762	1,166,579	3 48	194,320	661,033
Tuolumne	182,771	192,837	3 31	138,025	35,200
Ventura	488,310	455,743	3 78	50,000	150,000
Yolo	545,035	556,157	13 92	182,460	225,500
Yuba	269,587	283,166	4 55	110,240	60,450
Totals	26,890,951	26,252,622	$ 6 88	6,584,861	5,785,309

Note.—Reports will not show land cultivated in 1882 until the reports of 1883 are returned.

SCHEDULE L.

Showing the Increase and Decrease of Assessments of Land and Improvements respectively, and the Total Increase and Decrease of same, in the Assessment of 1881 *in respect to that of* 1880.

COUNTIES.	REAL ESTATE AND LOTS.		IMPROVEMENTS ON SAME.		TOTAL INCREASE AND DECREASE.	
	Increase 1881.	Decrease 1881.	Increase 1881.	Decrease 1881.	Total Increase 1881.	Total Decrease 1881.
Alameda		$3,633,283		$763,626		$4,396,909
Alpine		24,425		5,971		30,396
Amador	$122,314			1,824	$120,490	
Butte		378,172	$148,986			229,186
Calaveras	182,505		77,193		259,698	
Colusa		1,567,690	47,446			1,520,244
Contra Costa		117,062	83,061			34,001
Del Norte	2,899			7,488		4,589
El Dorado		22,456	60,695		38,239	
Fresno	457,577		113,234		570,811	
Humbolt		214,654	4,896			209,758
Inyo		17,401		37,413		54,814
Kern		132,109		22,592		154,701
Lake		68,081		3,770		71,851
Lassen		1,785	10,255		8,470	
Los Angeles	417,582		621,266		1,038,848	
Marin		911,027		85,150		996,177
Mariposa	145,965		35,889		181,854	
Mendocino	81,165			6,440	74,725	
Merced		146,010		48,348		194,358
Modoc		521	43,021		42,500	
Mono	918,870			88,510	830,360	
Monterey		43,136	107,252		64,116	
Napa		37,175	73,243		36,068	
Nevada		105,971	9,740			96,231
Placer	489,061			53,233	435,828	
Plumas	59,740		39,711		99,451	
Sacramento		2,101,500		185,040		2,286,540
San Benito		60,047		12,240		72,287
San Bernardino		11,586	28,646		17,060	
San Diego	1,704,909		124,920		1,829,829	
San Francisco		8,609,794		651,845		9,261,639

San Joaquin		354,875		278,099		76,776
San Luis Obispo	61,967		77,501		139,468	
San Mateo		594,665		324,700		919,365
Santa Barbara		433,729		1,119		434,848
Santa Clara	194,608		184,850		379,458	
Santa Cruz		280,503		59,322		339,825
Shasta		99,765		11,873		111,638
Sierra	36,362			15,220	21,142	
Siskiyou		77,118	17,167			59,951
Solano		736,108		48,029		784,137
Sonoma		516,899		181,182		698,081
Stanislaus	610,791		198,651		809,442	
Sutter		887,052		8,265		895,317
Tehama		56,997	75,110		18,113	
Trinity	109,603			75,264	34,339	
Tulare	1,965,418			1,142,520	822,898	
Tuolumne	10,956			1,211	9,745	
Ventura		108,634	7,081			101,553
Yolo	182,505			546	182,059	
Yuba		22,488		50,087		72,575
Totals	$7,754,897	$22,372,718	$2,467,913	$3,892,828	$8,065,011	$24,107,747

SCHEDULE M.

Showing the Increase and Decrease on the Assessment of Personal Property and Money, and the Total Increase and Decrease of all Property in 1881, *in respect to the Assessment of* 1880.

COUNTIES.	PERSONAL PROPERTY.		MONEY.		TOTAL OF REAL PROPERTY, PERSONAL PROPERTY, AND MONEY.	
	Increase 1881.	Decrease 1881.	Increase 1881.	Decrease 1881.	Increase 1881.	Decrease 1881.
Alameda	$20,320			$201,821		$4,578,410
Alpine		$25,130	$834			54,692
Amador		61,382		7,241	$51,867	
Butte		69,883	6,788			292,281
Calaveras		171,584		2,588	85,526	
Colusa	1,212,137			46,496		354,603
Contra Costa	545,738		13,813		525,550	
Del Norte		8,365		4,447		17,401
El Dorado		117,660	5,850			73,571
Fresno	376,304		17,498		964,613	
Humboldt		152,531		5,547		367,836
Inyo		59,465		5,788		120,067
Kern	123,675			2,322		33,348
Lake		77,341		6,674		155,866
Lassen		90,042		6,505		88,077
Los Angeles	435,014			19,164	1,454,698	
Marin		211,687		6,526		1,214,390
Mariposa		25,105	3,979		160,728	
Mendocino		339,356	7,662			256,969
Merced	259,227			32,988	31,881	
Modoc		82,428		9,860		49,788
Mono		53,892		6,285	770,183	
Monterey	37,361			6,446	95,031	
Napa		73,424		8,285		45,641
Nevada		240,250		40,360		376,841
Placer		104,127	26,816		358,517	
Plumas		47,162	42,123		94,412	
Sacramento		1,196,350		153,620		3,636,510
San Benito	223,938			10,035	141,616	
San Bernardino	20,952		68,363		106,375	
San Diego		83,638		9,069	1,737,122	

San Francisco		12,090,013		9,915,631		31,267,283
San Joaquin	941,988			54,279	810,933	
San Luis Obispo	175,855		35,792		351,115	
San Mateo		391,710	40,610			1,270,465
Santa Barbara		31,369	1,886			464,331
Santa Clara	184,307			108,872	454,893	
Santa Cruz		321,837		4,531		666,193
Shasta		64,308	2,122			173,824
Sierra		111,646		48,471		138,975
Siskiyou		103,471		23,430		186,852
Solano	391,695			139,794		532,236
Sonoma		190,181		134,576		1,022,838
Stanislaus	802,332			31,279	1,580,495	
Sutter	244,889		13,459			636,969
Tehama	264,939		30,386		313,438	
Trinity		41,984		12,223		19,868
Tulare	419,506		20,280		1,262,684	
Tuolumne		26,688		2,292		19,235
Ventura	102,272		15,089		15,808	
Yolo	896,043			344,184	733,918	
Yuba		169,524		22,485		264,584
Totals	$7,678,492	$16,833,533	$353,350	$11,434,114	$12,101,403	$48,379,944

SCHEDULE N.

Showing the Total Decrease on Each Class of Property of the Assessment of 1881 *below the Assessment of* 1880.

Class of Property.	Amounts.	Decrease.
Real Estate.		
Assessment of 1880	$349,157,295	
Assessment of 1881	334,539,474	
Decrease in 1881		$14,617,821
Improvements.		
Assessment of 1880	$111,536,922	
Assessment of 1881	110,112,007	
Decrease in 1881		1,424,915
Personal Property.		
Assessment of 1880	$149,656,007	
Assessment of 1881	140,500,966	
Decrease in 1881		9,155,041
Money.		
Assessment of 1880	$24,678,330	
Assessment of 1881	13,597,566	
Decrease in 1881		11,080,764
SUMMARY.		
Assessment exclusive of railroads for 1880	$635,028,554	
Assessment exclusive of railroads for 1881	598,750,013	
Total decrease in 1881, exclusive of railroad assessment		$36,278,541
Increase in Railroad Assessment.		
Assessed by the Board in 1881	$34,829,664	
Assessed by the Board in 1880	31,174,120	

Increase (deduct)		3,655,544
Total decrease in assessment of 1881 below 1880		$32,622,997

FINAL SUMMARY.

Total assessment of 1880	$666,202,674	
Total assessment of 1881	633,579,677	
Total decrease		$32,622,997

SCHEDULE O.

Showing the Increase of Assessment of 1882 *over, and Decrease of Assessment of* 1882 *below, that of* 1881, *as made by the Assessors.*

Counties.	Real Estate and Lots.		Improvements on Same.		Total Increase and Decrease.	
	Increase 1882.	Decrease 1882.	Increase 1882.	Decrease 1882.	Increase 1882.	Decrease 1882.
Alameda	$121,159		$622,897		$744,056	
Alpine	5,522			$4,181	1,341	
Amador		$110,928	117,569		6,641	
Butte	304,370		563		304,933	
Calaveras	18,812			22,424		$3,612
Colusa	356,173		103,963		460,136	
Contra Costa	59,973		196,095		256,068	
Del Norte	47,893		69		47,962	
El Dorado	63,491		36,630		100,121	
Fresno	195,163		181,715		376,878	
Humboldt	151,041			95,337	55,704	
Inyo	989		13,852		14,841	
Kern	90,252			59,236	31,016	
Lake		158,602	16,208			142,394
Lassen	99,760		47,739		147,499	
Los Angeles	1,353,605		124,951		1,478,556	
Marin	58,803		47,325		106,128	
Mariposa		93,591		33,337		126,928
Mendocino		1,496	6,077		4,581	
Merced		7,849	84,704		76,855	
Modoc		60,992		18,479		79,471
Mono		146,277		36,335		182,612
Monterey	8,628			17,209		8,581
Napa	39,039		87,216		126,255	
Nevada		1,003,383	19,275			984,108
Placer		886,435	46,942			839,493
Plumas		117,427	28,767			88,660
Sacramento		1,026,100	81,940			944,160
San Benito		2,465	3,395		930	
San Bernardino	97,661		95,888		193,549	
San Diego	678,353		143,009		821,362	
San Francisco		4,933,026	853,925			4,079,101

San Joaquin	366,786		248,838		615,624	
San Luis Obispo	45,149		114,932		160,081	
San Mateo	337,740		410,445		748,185	
Santa Barbara	33,319		66,928		100,247	
Santa Clara	322,449		110,584		433,033	
Santa Cruz		128,992	3,914			125,078
Shasta	43,681			3,825	39,856	
Sierra	42,975		5,395		48,370	
Siskiyou		6,491		16,758		23,249
Solano	415,828		103,522		519,350	
Sonoma	346,904		241,674		588,578	
Stanislaus		126,583	60,215			66,368
Sutter		11,955		16,339		28,294
Tehama	129,497		113,590		243,087	
Trinity		78,722	130,758		52,036	
Tulare	316,378		92,170		408,548	
Tuolumne	15,392		25,002		40,394	
Ventura		25,637	15,865			9,772
Yolo	97,815		70,579		168,394	
Yuba		73,930		46,925		120,855
Totals	$6,264,600	$9,000,881	$4,775,125	$370,385	$9,521,195	$7,852,736

SCHEDULE P.

Showing the Increase of Assessment of 1882 *over, and the Decrease of Assessment of* 1882 *below, that of* 1881, *as made by the Assessors.*

Counties.	Personal Property.		Money.		Total Increase and Decrease of Real Estate, Personal Property, and Money.	
	Increase 1882.	Decrease 1882.	Increase 1882.	Decrease 1882.	Increase 1882.	Decrease 1882.
Alameda		$125,391		$14,192	$604,473	
Alpine		393		2,897		$1,949
Amador		29,990		6,728		30,077
Butte		277,334	$4,097		31,696	
Calaveras		49,748		15,386		68,746
Colusa		526,164	127,936		61,908	
Contra Costa		289,305	26,757			6,480
Del Norte		5,984	17,863		59,841	
El Dorado	$2,645			4,265	98,501	
Fresno		308,420	6,899		75,357	
Humboldt	27,295		72,530		155,529	
Inyo	16,643			2,248	29,236	
Kern	77,634		1,299		109,949	
Lake	9,801		26,012			106,581
Lassen	44,858			2,191	190,166	
Los Angeles	21,905		17,963		1,518,424	
Marin		197,262	137,098		45,964	
Mariposa	1,664		2,526			122,738
Mendocino	128,986		11,868		145,435	
Merced		202,453	7,053			118,545
Modoc	39,138		7,994			32,339
Mono		58,546	1,684			239,474
Monterey		31,634	2,845			37,370
Napa	38,677			41,964	122,968	
Nevada		127,315		34,365		1,145,788
Placer		306,919	23,095			1,123,317
Plumas		22,197		37,222		148,079
Sacramento		535,600		45,925		1,525,685
San Benito	49,658		14,090		64,678	
San Bernardino	130,157			38,628	285,078	

San Diego	284,610			900	1,105,072	
San Francisco		14,187,318		2,032,634		20,299,053
San Joaquin		818,910		57,806		261,092
San Luis Obispo		3,686		7,032	149,363	
San Mateo		22,480	804,344		1,530,049	
Santa Barbara		15,454		13,372	71,421	
Santa Clara		333,983		20,571	78,479	
Santa Cruz		12,683		69,088		206,849
Shasta		33,605		6,765		514
Sierra	4,771		15,182		68,323	
Siskiyou		74,063	35,998			61,314
Solano		217,830	67,725		369,245	
Sonoma		133,564	28,356		483,370	
Stanislaus		503,891	7,982			562,277
Sutter		230,689	2,434			256,549
Tehama		149,308	16,324		110,103	
Trinity		8,395	8,614		52,255	
Tulare	171,483		49,672		629,703	
Tuolumne		42		5,792	34,560	
Ventura		187,664	20,775			176,661
Yolo		462,973	15,786			278,793
Yuba		211,245		18,340		350,440
Totals	$1,049,925	$20,702,438	$1,582,801	$2,478,311	$8,281,146	$27,160,710

SCHEDULE Q.

Summary of the Increase and Decrease of Each Class of Property Assessed in 1882, *respectively, Over and Below the Assessment of* 1881.

Classes of Property.	Amounts.	Increase and Decrease.
Real Estate.		
Assessment of 1881	$334,539,474	
Assessment of 1882	331,803,193	
Decrease in 1882		$2,736,281
Personal Property.		
Assessment of 1881	$140,500,966	
Assessment of 1882	120,848,453	
Decrease in 1882		19,652,513
Money.		
Assessment of 1881	$13,597,566	
Assessment of 1882	12,702,056	
Decrease in 1882		895,510
Decrease on above		$23,284,304
Improvements.		
Assessment of 1882	$114,516,747	
Assessment of 1881	110.112,007	
Increase in 1882		4,404, 740
Total decrease, exclusive of railroads, in 1882		$18,879,564
Railroads.		
Assessment of 1881	$34,829,664	
Assessment of 1882	27,602,313	
Decrease in 1882		7,227,351
Total decrease of the whole assessment of 1882 below that of 1881		$26,106,915
SUMMARY.		
Assessment, exclusive of railroads, in 1881	$598,750,013	
Assessment, exclusive of railroads, in 1882	579,870,449	
Decrease	$18,879,564	
Decrease on railroad assessment in 1882	7,227,351	
Total decrease		$26,106,915

SUMMARY

OF THE

Reports of Assessors for 1882,

SHOWING THE

Various Classes of Property Assessed, and their Respective Values.

Note.—The Assessor of Solano County failed to make a report. The Agricultural Statistics are reported by the Surveyor-General in his report for 1882, derived from reports to this office, and hence are not set out in this report.

SCHEDULE T.

Showing kinds of Property and the Assessed Value of each kind in the several Counties for 1882.

COUNTIES.	Franchises.	Solvent Credits.	State, County, and Municipal Bonds.	Jewelry and Plate.
Alameda	$3,179	$186,918	----------	$29,090
Alpine	3,150	2,267	$2,580	95
Amador	----------	----------	----------	----------
Butte	----------	296,920	----------	7,300
Calaveras	950	40,044	5,600	1,640
Colusa	----------	166,460	----------	4,991
Contra Costa	7,000	148,240	----------	3,400
Del Norte	----------	41,737	1,208	830
El Dorado	125	64,840	----------	3,750
Fresno	----------	60,915	----------	3,755
Humboldt	250	202,309	----------	1,980
Inyo	----------	26,314	7,365	580
Kern	----------	42,542	----------	1,760
Lake	----------	47,251	----------	617
Lassen	----------	80,000	----------	----------
Los Angeles	43,428	303,141	550	5,350
Marin	----------	----------	----------	6,500
Mariposa	----------	40,110	285	440
Mendocino	2,600	219,800	----------	3,496
Merced	6,550	39,659	----------	545
Modoc	500	106,219	----------	565
Mono	----------	44,300	6,000	950
Monterey	----------	94,510	----------	----------
Napa	----------	328,230	53,500	4,719
Nevada	----------	234,165	17,200	6,690
Placer	----------	180,633	----------	3,944
Plumas	----------	----------	50,000	3,000
Sacramento	----------	440,810	----------	75,515
San Benito	----------	96,490	27,440	----------
San Bernardino	----------	114,018	----------	2,028
San Diego	6,100	111,584	10,318	2,316
San Francisco	1,133,155	721,842	38,405	275,064
San Joaquin	----------	723,692	11,000	6,740
San Luis Obispo	9,500	119,882	----------	1,480
San Mateo	50	33,295	----------	4,935
Santa Barbara	12,500	111,349	----------	2,425
Santa Clara	235,550	237,265	11,000	10,805
Santa Cruz	----------	59,779	----------	1,255
Shasta	5,100	76,000	61,000	3,397
Sierra	----------	89,445	2,450	865
Siskiyou	2,400	325,594	----------	1,200
Solano	----------	----------	----------	----------
Sonoma	35,000	251,755	----------	5,120
Stanislaus	1,000	233,191	----------	3,860
Sutter	400	118,407	----------	----------
Tehama	----------	119,250	18,000	----------
Trinity	420	73,580	13,542	1,160
Tulare	----------	128,452	10,491	740
Tuolumne	5,500	20,450	----------	1,150
Ventura	----------	96,143	----------	845
Yolo	----------	574,000	----------	1,650
Yuba	----------	118,375	20,000	1,570
Totals	$1,514,407	$7,992,172	$367,934	$500,107

SCHEDULE T—Continued.

COUNTIES.	HORSES—THOROUGHBRED.			HORSES—GRADED.			HORSES—AMERICAN.		
	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.
Alameda	11	$418 10	$4,600	716	$32 61	$23,355	6,164	$42 57	$262,455
Alpine				198	49 00	9,768	5	100 00	500
Amador							500	50 00	25,000
Butte	72		13,400				5,864		314,400
Calaveras	5	260 00	1,300	2,064	32 00	66,048	108	85 00	9,180
Colusa	22	150 00	3,300				1,838	77 55	142,545
Contra Costa	22	338 00	7,440	41	100 00	4,100	1,720	51 80	89,140
Del Norte							306	56 92	17,420
El Dorado							847	65 00	55,060
Fresno	4		1,350	4,514		143,068	670		43,220
Humboldt	1		800	3,157	25 54	80,629	792	42 47	33,640
Inyo	18	74 44	1,340	3,038	22 36	67,946			
Kern	17	300 00	5,100	3,146	25 47	80,135	396	63 31	25,070
Lake							795	68 30	54,317
Lassen	1		600	4,500	15 00	67,500	650	70 00	45,500
Los Angeles	45	206 67	9,300	3,031	36 27	109,948	1,707	57 69	98,485
Marin	3		1,300	1,436		40,060	587		39,365
Mariposa							51	65 39	3,335
Mendocino	17	138 00	2,350				1,232	60 00	74,055
Merced				4	225 00	900	807	65 58	53,925
Modoc	8	270 00	2,160	6,219	22 78	141,695	735	48 21	35,435
Mono	3	200 00	600				275	75 00	20,625
Monterey	3		3,000	53		13,250	1,942		97,000
Napa	9	344 44	3,100	1,604	64 24	103,055	2,293	29 05	66,623
Nevada	1	300 00	300				693	74 65	51,735
Placer	6	225 00	1,350	483		18,675	1,099	62 49	68,680
Plumas	20	150 00	3,000	400	50 00	20,000	800	40 00	32,000
Sacramento				40	150 00	6,000	4,204	75 00	315,300
San Benito	7	125 00	855						100,400
San Bernardino	1		200	2,442	26 32	64,273	610	58 00	35,380
San Diego	8	143 40	1,150				364	84 50	30,755
San Francisco							10,587		687,610
San Joaquin	79	233 00	18,407	6,827	32 00	218,464	4,825	63 68	306,256

San Luis Obispo	8	425 00	3,400	-----	-----	-----	602	67 14	40,420
San Mateo	26	144 23	3,750	1,823	24 06	43,875	1,017	57 64	58,625
Santa Barbara	-----	-----	-----	-----	-----	-----	970	69 53	67,440
Santa Clara	133	200 00	26,600	-----	-----	-----	9,167	45 00	412,515
Santa Cruz	-----	-----	-----	-----	-----	-----	996	55 37	55.157
Shasta	-----	-----	-----	3	200 00	600	790	49 00	38,710
Sierra	6	211 66	1,300	766	28 52	21,855	170	50 00	8,455
Siskiyou	-----	-----	-----	-----	-----	-----	900	50 00	45,000
Solano	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sonoma	31	400 00	12,400	5,121	25 00	127,930	4,015	60 00	238,785
Stanislaus	7	357 00	2,500	5,418	29 54	214,253	1,145	73 38	84,025
Sutter	12	220 83	2,650	2,899	44 64	129,417	657	78 29	51,437
Tehama	-----	-----	-----	-----	-----	-----	4,198	-----	159,836
Trinity	-----	-----	-----	-----	-----	-----	935	35 47	33,170
Tulare	20	213 40	4,275	-----	-----	-----	1,067	59 40	60,240
Tuolumne	4	325 00	1,300	1,330	28 00	27,240	738	60 00	44,280
Ventura	6	-----	1,800	-----	-----	-----	558	-----	29,883
Yolo	14	400 00	5,600	3,640	40 00	145,600	3,070	80 00	245,600
Yuba	4	450 00	1,800	-----	-----	-----	1,172	60 80	71,265
Totals	654	-----	$153,677	64,913	-----	$1,999,639	85,633	-----	$4,979,254

SCHEDULE T—Continued.

COUNTIES.	HORSES—SPANISH.			COLTS.			CATTLE.		
	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.
Alameda				1,488	$14 02	$20,875	44	$20 45	$900
Alpine				58	16 00	940	1	45 00	45
Amador	1,500	$40 00	$60,000	500	20 00	10,000	1,000	20 00	20,000
Butte	2,738		81,230	1,023		16,740	760		2,410
Calaveras				334	14 00	4,676	250	15 00	3,750
Colusa	5,611	41 25	231,466	1,402	21 54	30,200	54	18 15	990
Contra Costa	4,020	26 90	108,150	2,800	16 50	46,200	244	25 00	6,100
Del Norte	194	28 58	5,545	101	21 83	2,205			
El Dorado	1,184	34 20	40,495	567	21 16	12,000	105	14 19	1,490
Fresno				1,027		17,199	26		490
Humboldt				769	14 75	11,344	656	13 60	8,928
Inyo				355	6 65	2,362			
Kern				1,223	15 44	18,893			
Lake	945	25 58	24,175	324	24 50	8,000	5	10 40	52
Lassen				1,350	10 00	13,500	300	20 00	6,000
Los Angeles	4,202	21 81	91,648	1,491	14 55	21,698			
Marin				357		11,685	217		2,708
Mariposa	1,599	28 45	45,500	324	13 72	4,447	114	26 31	2,900
Mendocino	2,654	30 00	69,682	437	34 00	14,823	80	22 25	1,786
Merced	2,958	34 00	100,112	664	21 42	14,227	120	20 00	2,425
Modoc				688	10 53	7,429	312	15 00	4,670
Mono	500	10 00	5,000	428	15 00	6,425	450	20 00	9,000
Monterey	4,230	25 00	105,750						
Napa				851	27 95	23,785	97	32 00	3,105
Nevada	1,608	39 80	63,995	555	20 16	11,190			
Placer	1,016	30 93	31,425	550	21 33	11,733	283	20 12	5,695
Plumas	300	20 00	6,000	100	18 00	1,800	200	25 00	5,000
Sacramento	4,043	25 00	101,075	4,748	20 00	94,970			6,500
San Benito				916	20 00	19,320			
San Bernardino				743	13 13	9,750	688	15 03	10,340
San Diego	3,780	22 10	83,691	754	12 00	9,106	10	23 00	230
San Francisco									
San Joaquin				2,846	22 87	65,098	228	18 93	4,316
San Luis Obispo	3,833	28 38	108,771	1,694	16 56	28,060	1,102	17 09	19,836

San Mateo				823	20 43	16,815	108	23 75	2,565
Santa Barbara	3,323	26 13	86,859	949	16 05	15,233	448	23 82	10,672
Santa Clara				2,905	25 00	72,625	395	20 00	7,900
Santa Cruz	1,681	25 45	42,820	506	20 50	10,379			
Shasta	2,309	24 00	55,416	830	12 50	10,375	600	15 00	9,000
Sierra				192	13 00	2,490	180	19 30	3,465
Siskiyou	4,740	15 00	71,100	560	10 00	5,600	60	15 00	900
Solano									
Sonoma				1,823	20 00	36,460	522	15 00	7,830
Stanislaus				1,388	24 69	34,282			
Sutter	846	23 41	19,805	858	24 67	21,168			
Tehama							5,749		64,969
Trinity				86	16 28	1,400	38	18 94	720
Tulare	6,727	33 00	216,135	2,185	15 40	84,360	823	15 00	12,555
Tuolumne				365	15 00	5,475	510	20 00	10,200
Ventura	2,416		71,410	732		15,805			
Yolo	860	20 00	17,200	2,350	30 00	70,500	530		15,900
Yuba	2,011	32 88	66,125	596	20 40	12,160	37	25 00	925
Totals	71,828		$2,010,580	48,615		$985,807	17,646		$277,267

SCHEDULE T—Continued.

COUNTIES.	CATTLE—STOCK.			COWS—THOROUGHBRED.			COWS—AMERICAN.		
	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.
Alameda	2,673	$9 34	$24,991	16	$62 50	$1,000	5,470	$20 33	$111,235
Alpine	295	14 00	4,036	------	------	------	------	------	------
Amador	3,000	12 00	36,000	------	------	------	1,000	25 00	25,000
Butte	4,910	------	70,870	40	------	2,400	2,103	------	42,440
Calaveras	3,216	15 00	48,240	------	------	------	------	------	------
Colusa	2,062	12 10	24,961	30	64 83	1,945	2,237	25 01	55,950
Contra Costa	3,094	11 00	34,034	42	34 76	1,460	4,140	20 00	82,800
Del Norte	918	8 75	8,031	------	------	------	2,169	19 33	41,927
El Dorado	3,133	12 23	38,320	------	------	------	------	------	------
Fresno	23,817	------	191,763	3	------	135	16	------	625
Humboldt	7,616	10 40	79,224	11	50 90	560	------	------	------
Inyo	4,880	10 03	48,975	------	------	------	------	------	------
Kern	29,880	------	298,800	122	31 14	3,800	------	------	------
Lake	1,234	12 91	15,933	4	75 00	300	1,509	20 32	30,746
Lassen	10,000	12 00	120,000	20	40 00	800	1,200	18 00	21,600
Los Angeles	7,143	11 00	78,571	22	57 27	1,260	3,550	25 83	91,685
Marin	2,866	------	34,573	69	------	2,130	24,204	------	435,693
Mariposa	5,051	15 00	75,765	7	51 93	360	------	------	------
Mendocino	5,842	13 00	76,244	38	60 00	1,384	3,026	20 00	63,324
Merced	9,580	10 15	97,347	1	100 00	100	1,153	23 81	27,595
Modoc	14,492	11 95	173,189	23	40 00	915	------	------	------
Mono	2,000	11 00	22,000	------	------	------	650	25 00	16,250
Monterey	10,843	10 00	108,430	8	50 00	400	4,975	16 00	79,600
Napa	2,756	13 64	37,603	23	46 52	1,070	------	------	------
Nevada	2,777	11 55	32,075	10	92 50	925	------	------	------
Placer	1,282	10 73	13,757	------	------	------	1	40 00	40
Plumas	1,500	10 00	15,000	------	------	------	3,000	20 00	60,000
Sacramento	9,245	10 00	92,450	75	80 00	6,000	9,304	20 00	186,080
San Benito	6,127	9 00	58,692	------	------	------	3,856	19 00	74,570
San Bernardino	7,264	10 00	72,640	61	50 00	3,050	------	------	------
San Diego	9,308	17 36	161,596	12	55 00	665	12	37 00	450
San Francisco	5,391	------	134,730	------	------	------	------	------	------
San Joaquin	9,189	10 00	91,890	21	57 00	1,197	------	------	------
San Luis Obispo	23,985	12 50	299,763	2	75 00	150	------	------	------

San Mateo	2,229	11 64	25,985	41	52 31	2,145	116	27 00	3,140
Santa Barbara	9,142	12 50	114,309	11	49 10	540			
Santa Clara	10,013	15 00	151,695	241	50 00	12,050			
Santa Cruz	1,977	12 00	23,724	3	50 00	150			
Shasta	6,720	10 00	67,200				1,130	20 00	22,600
Sierra	823	11 22	9,240						
Siskiyou	15,800	10 00	158,000	4	45 00	180			
Solano									
Sonoma	4,325	10 00	43,250	36	60 00	2,160	15,324	20 00	306,480
Stanislaus	4,553	12 52	57,047						
Sutter	1,475	11 94	17,604				850	25 07	21,305
Tehama									
Trinity	2,448	10 00	24,480	5	100 00	500	459	20 00	9,190
Tulare	8,307	10 00	84,630	15	30 00	440			
Tuolumne	2,445	15 00	36,675	2	60 00	120	15	30 00	450
Ventura	1,677		19,733	9		630	1		75
Yolo	2,275		34,125	15	60 00	900	3,980	22 00	87,560
Yuba	2,616	11 00	28,775	1		150	3,296	17 23	56,760
Totals	314,194		$3,616,965	1,043		$51,971	98,746		$1,955,170

SCHEDULE T—Continued.

COUNTIES.	COWS—GRADED.			CALVES.			OXEN.		
	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.
Alameda	130	$15 00	$1,950	2,210	$5 46	$12,077			
Alpine	196	23 00	4,475	205	7 00	1,505			
Amador				1,000	5 00	5,000	200	$75 00	$15,000
Butte	540		8,430	1,776		11,400	90		3,600
Calaveras	2,488	25 00	62,204	2,554	8 00	20,432	16	42 00	672
Colusa				1,406	8 03	11,290	21	37 14	780
Contra Costa	870	16 00	13,920	1,940	5 00	9,700			
Del Norte				523	4 90	2,566	89	29 77	2,650
El Dorado	3,679	19 53	71,855	2,896	5 24	15,185	116	53 88	6,250
Fresno	1,828		43,542	2,112		9,332	28		1,125
Humboldt	7,129	15 93	113,619	3,019	5 11	15,429	302	37 68	11,380
Inyo	951	20 35	19,340	1,070	5 00	5,379	110	26 50	2,915
Kern	1,599	20 00	31,980	3,448	3 08	10,635	50	22 40	1,120
Lake				950	7 75	7,371	59	21 00	1,240
Lassen				3,000	6 00	18,000	100	50 00	5,000
Los Angeles	2,511	19 97	50,145	2,186	6 36	13,895			
Marin				3,483		17,450	50		1,730
Mariposa	644	20 00	12,880	757	5 00	3,785	58	37 50	2,175
Mendocino	180	40 00	7,256	1,832	3 00	5,366	352	43 24	15,220
Merced				1,220	4 31	5,259	4	25 00	100
Modoc	941	13 96	13,140	1,592	5 78	9,227	174	25 17	4,380
Mono				20	5 00	100	60	40 00	2,400
Monterey	3,034	12 00	36,408	1,295	3 77	4,885			
Napa	4,037	20 61	83,220	2,394	5 71	13,676			
Nevada	2,314	22 03	50,980	1,038	5 41	5,615	171	35 26	6,030
Placer	662		15,816	1,301	5 62	7,312	203	29 18	5,925
Plumas				1,000	5 00	5,000	100	50 00	5,000
Sacramento				5,405	4 00	21,620	48	25 00	1,200
San Benito									
San Bernardino	1,899	16 24	30,840	890	4 64	4,103	81	16 50	1,336
San Diego	1,435	22 70	32,651	796	6 13	4,876	24	37 00	895
San Francisco									
San Joaquin	4,072	25 00	101,800	1,763	6 03	10,644			
San Luis Obispo	11,743	20 05	235,495	7,865	4 06	31,917	4	25 00	100

San Mateo	6,470	20 00	129,420	2,355	5 32	13,550	56	25 89	1,450
Santa Barbara	3,237	20 00	64,740	2,704	4 84	13,369			
Santa Clara	8,563	25 00	214,075	6,217	5 00	31,085	135	20 00	2,700
Santa Cruz	3,315	16 18	53,645	973	4 50	4,378	318	18 50	5,880
Shasta	6	56 66	340	901	5 00	4,505	140	22 50	3,150
Sierra	986	20 45	20,165	528	5 00	2,652	149	25 67	3,825
Siskiyou	2,300	20 00	46,000	3,400	5 00	17,000	83	50 00	4,150
Solano									
Sonoma	3,147	15 00	47,205	4,129	5 00	20,640	114	20 00	2,280
Stanislaus	1,820	28 49	43,867	2,709	3 77	10,235			
Sutter	805	21 48	17,289	1,203	5 96	7,167			
Tehama							110		4,400
Trinity				151	5 00	755	66	44 00	2,905
Tulare	3,716	20 00	74,220	2,484	5 00	13,197	46	27 00	1,220
Tuolumne	2,550	22 00	56,100	900	5 00	4,500	50	28 00	1,400
Ventura				549		3,994			
Yolo				1,430	8 00	11,440			
Yuba				1,671	5 34	8,930	139	26 33	3,660
Totals	89,797		$1,809,012	96,270		$487,428	3,916		$135,243

Schedule T.—Continued.

Counties.	Mules.			Jacks and Jennies.			Goats—Common.		
	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.
Alameda	275	$62 69	$17,240	3	$150 00	$450	48	$1 35	$65
Alpine	24	41 00	985	2	5 00	10			
Amador	500	50 00	250,000	100	10 00	1,000	10,000	50	5,000
Butte	1,878		111,400	140		3,000	1,400		1,400
Calaveras	210	30 00	6,300	125	10 00	1,250	2,524	75	1,893
Colusa	4,283	64 24	275,150	54	133 24	7,195	1,350	1 50	2,017
Contra Costa	352	41 50	14,618			340			
Del Norte							100	2 00	200
El Dorado	60	52 17	3,130	14	12 00	170	12,984	1 14	14,910
Fresno	650		31,500	104		3,091	3,367		2,402
Humboldt	926	37 22	34,466	6	99 17	595	466	1 18	544
Inyo	372	40 52	15,075	11	46 36	510	1,056	83	881
Kern	488	44 43	21,683	131	23 56	3,087	912	1 00	912
Lake	177	47 88	8,495	2	225 00	450	2,669	1 13	3,029
Lassen	225	20 00	4,500	8	80 00	640	2,800	1 00	2,800
Los Angeles	741	36 84	27,295	25	43 00	1,075	404	1 25	505
Marin	48		2,105				210		210
Mariposa	276	29 87	8,245	94	12 44	1,170	9,905	78	7,817
Mendocino	412	45 35	16,684	4	75 00	300	2,143	1 82	3,914
Merced	1,174	61 50	69,150	35	75 00	2,645	1,382	60	800
Modoc	403	33 62	13,530	23	193 48	4,450	692	1 37	954
Mono	110	35 00	3,850	40	15 00	600	100	1 00	100
Monterey	525	40 00	21,000						
Napa	502	85 87	43,107	11	168 18	1,950	461	1 08	498
Nevada	86	50 12	4,310				2,462	1 14	2,815
Placer	164	56 12	9,205	1	40 00	40	6,707	1 00	6,610
Plumas	100	50 00	5,000	30	25 00	750	500	1 25	625
Sacramento	307	50 00	15,350	10	90 00	900	570	1 00	570
San Benito	54		1,980	8		655	4,068	90	3,675
San Bernardino	198	32 61	6,456	31	34 77	1,077	90	1 00	90
San Diego	252	27 40	6,922	16	700 00	115	2,082	1 00	2,082
San Francisco	132		6,157				142	5 00	725
San Joaquin	1,893	61 30	116,055	39	188 41	7,348	400	1 25	500
San Luis Obispo	155	36 29	5,625	2	50 00	100	1,215	91	1,115

San Mateo	164	31 64	5,790	----	----	----	275	1 00	275
Santa Barbara	340	30 66	10,425	3	66 67	200	----	----	----
Santa Clara	196	48 25	9,457	15	50 00	750	1,255	1 50	1,882
Santa Cruz	97	35 00	3,415	18	9 50	176	247	----	260
Shasta	120	55 00	6,600	7	200 00	1,400	5,100	1 25	6,377
Sierra	101	42 00	4,255	7	43 25	305	395	1 00	401
Siskiyou	675	36 00	24,300	32	215 00	6,900	1,620	2 00	3,240
Solano	----	----	----	----	----	----	----	----	----
Sonoma	420	50 00	21,000	11	20 00	220	1,600	1 50	2,400
Stanislaus	----	----	148,645	79	139 01	10,995	32	1 00	32
Sutter	813	62 88	51,122	3	241 67	725	----	----	----
Tehama	1,096	----	62,060	6	----	1,800	----	----	----
Trinity	318	39 10	12,445	13	106 00	1,378	24	1 12	27
Tulare	696	40 00	28,005	41	33 00	1,365	2,298	1 00	2,159
Tuolumne	110	55 00	5,500	40	15 00	600	2,650	1 00	2,650
Ventura	192	----	7,157	15	----	905	91	----	101
Yolo	1,460	70 00	102,200	25	200 00	5,000	----	----	----
Yuba	368	57 39	21,110	13	36 15	470	1,150	1 00	1,150
Totals	25,118	----	$1,475,044	1,397	----	$78,152	89,840	----	$90,612

SCHEDULE T—Continued.

COUNTIES.	GOATS—ANGORA.			HOGS.			SHEEP—IMPORTED OR FINE.		
	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.
Alameda				4,468	$2 79	$12,477	800	$9 93	$7,950
Alpine				116	4 00	470			
Amador				500	2 00	1,000			
Butte				9,708		24,270	2,450		26,300
Calaveras	700	$1 50	$1,050	3,332	2 00	6,664			
Colusa	43	6 05	260	18,456	2 68	49,574			
Contra Costa				6,740	3 15	21,235			
Del Norte				2,878	37	1,056			
El Dorado	200	4 00	800	2,192	3 76	8,260			
Fresno				19,720		44,946			
Humboldt	200	1 50	300	6,929	1 86	12,895	163	8 00	1,307
Inyo				1,699	3 23	5,496			
Kern				12,775	2 23	28,545	1,096	5 37	5,886
Lake	103	2 06	213	4,617	2 10	9,747			
Lassen				1,500	2 00	3,000			
Los Angeles				16,632	1 60	26,611	1,541	5 25	8,095
Marin				7,776		18,351			
Mariposa	66	20 20	1,320	7,633	2 07	15,866	15	5 00	75
Mendocino				8,134	1 63	13,296	186	9 30	1,740
Merced				5,087	2 08	12,593			
Modoc				4,018	2 14	8,590	32	9 09	285
Mono				140	5 00	700			
Monterey				8,345	2 25	18,859			
Napa	600	1 50	900	5,408	2 47	13,360	3	5 00	15
Nevada	2	40 00	80	1,191	4 77	5,680			
Placer	860	2 00	1,720	2,748	3 17	8,738	46	10 00	460
Plumas				1,000	3 00	3,000			
Sacramento				18,485	2 00	36,970			
San Benito				3,740	1 60	6,500			
San Bernardino				1,633	1 15	1,889	3	5 00	15
San Diego				2,811	2 14	5,986	1,076	5 00	5,404
San Francisco				2,279	5 00	11,180			
San Joaquin				9,700	3 55	34,435	688	4 50	3,096
San Luis Obispo				7,990	2 21	17,674	200	4 90	980

San Mateo	3	5 00	15	2,329	2 45	5,750			
Santa Barbara				6,718	1 85	12,447			
Santa Clara				10,125	3 50	35,437	400	10 00	4,000
Santa Cruz				2,344	2 70	6,558			
Shasta				5,300	2 00	10,600			
Sierra	11	4 00	44	210	5 90	1,240			
Siskiyou				4,400	2 50	11,000			
Solano									
Sonoma				17,232	2 00	34,500	896	5 00	4,480
Stanislaus						14,555			
Sutter				9,360	2 47	23,097			
Tehama				8,388		24,788			
Trinity				763	3 81	2,910	15	10 00	150
Tulare				20,451	2 00	41,114			
Tuolumne				2,250	2 70	6,075			
Ventura				12,986		25,469			
Yolo				15,520		35,210			
Yuba				4,774	2 35	11,220			
Totals	2,788		$6,702			$791,883	9,610		$70,238

SCHEDULE T—Continued.

COUNTIES.	SHEEP—GRADED.			SHEEP—COMMON.			LAMBS.		
	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.	Number.	Average Value.	Total Value.
Alameda	4,500	$1 25	$5,625	16,897	$1 04	$17,590	3,775	$0 50	$1,890
Alpine				480	1 75	850			
Amador				15,000	1 50	22,500	5,000	75	3,750
Butte				78,555		111,800			
Calaveras	100	2 75	275	58,622	1 50	87,993	15,932	25	3,983
Colusa	5,307	1 97	10,460	138,236	1 50	206,613	16,484	30	5,091
Contra Costa				16,275	1 60	26,040			
Del Norte				2,701	1 50	4,048			
El Dorado				19,983	1 50	29,980			
Fresno	311		1,200	407,898		408,798			
Humboldt	441	4 12	1,821	175,603	1 50	263,404	698	25	173
Inyo				2,222	1 43	3,195			
Kern	382,290	1 48	566,038						
Lake	96		445	54,129	1 47	80,021			
Lassen				12,000	1 00	12,000			
Los Angeles	300,501	1 26	379,087				3,470	50	1,735
Marin				2,402		4,585			
Mariposa	470	2 00	940	69,799	1 00	69,799	18,830	50	9,915
Mendocino	2,200	2 46	5,430	240,865	1 49	361,187	35,328	50	17,664
Merced	11,334	1 36	15,453	199,894	1 01	203,019	49,801	27	13,352
Modoc				25,425	1 48	37,679			
Mono									
Monterey	1,000	5 00	5,000	50,960	1 00	50,960			
Napa				49,159	1 50	73,960	9,566	50	4,700
Nevada				7,760	1 19	9,215	265	53	140
Placer				71,284	1 25	89,474	8,205	25	20,770
Plumas				5,000	1 50	7,500	500	1 00	500
Sacramento	15,400	2 00	30,800	95,120	1 30	123,650	23,600	50	11,800
San Benito				35,685		34,450			280
San Bernardino				35,823	1 11	39,763	2,150	43	929
San Diego	131,473	1 20	158,894	8,737	1 00	8,737			
San Francisco				1,489		3,435			
San Joaquin	3,638	2 43	8,855	73,125	1 08	78,975	9,785	30	2,740
San Luis Obispo	55,343	1 31	72,357	56,489	1 00	56,564	10,011	50	5,086

San Mateo				364	1 63	595			
Santa Barbara	46,722	1 27	59,427	112,136	95	106,951			
Santa Clara				28,981	1 00	28,981	550	50	275
Santa Cruz				1,214		1,298			
Shasta	14	8 00	112	36,000	1 50	54,000	300	50	150
Sierra				533	1 00	540			
Siskiyou				43,350	2 00	86,700			
Solano									
Sonoma	6,920	2 00	13,840	123,720	1 50	185,580	16,380	50	8,190
Stanislaus	124,715	80	100,893				37,429	28	10,424
Sutter	819	2 06	1,835	36,476	1 49	54,547	3,589	27	967
Tehama				183,315	1 50	274,972	92,256	50	46,181
Trinity				28,285	2 00	56,570			
Tulare	190	1 80	343	258,618	1 25	313,399			
Tuolumne				12,450	1 50	18,675	3,210	50	1,605
Ventura	2,984		6,422	99,951		97,451			
Yolo	88,560	1 50	132,840						
Yuba				54,840		82,260			
Totals	$1,185,328		$1,578,392	$3,047,850		$3,890,303			$172,290

SCHEDULE T—Continued.

COUNTIES.	POULTRY.			BRANDIES.			WINES.		
	No. Dozen.	Average Value.	Total Value.	No. Galls.	Average Value.	Total Value.	No. Galls.	Average Value.	Total Value.
Alameda	4,301	$3 09	$13,309	---	---	$10,370	---	---	$17,500
Alpine	83	6 00	496	---	---	---	31	$1 00	31
Amador	400	3 00	1,200	150,000	$0 26	39,000	---	---	---
Butte	4,000	---	24,000	1,720	---	3,470	5,700	---	1,420
Calaveras	1,640	4 00	6,560	4,216	2 00	8,432	32,820	20	6,564
Colusa	3,009	3 61	10,872	---	---	6,167	55	3 18	175
Contra Costa	2,643	4 00	10,572	---	---	---	7,000	30	2,100
Del Norte	343	3 57	1,227	1,409	2 28	3,220	334	1 65	553
El Dorado	---	---	5,855	8,379	68	5,750	67,650	16	11,165
Fresno	2,590	---	8,349	1,322	---	2,120	20,060	---	5,035
Humboldt	1,887	2 11	3,993	225	3 11	700	---	---	---
Inyo	516	4 98	2,571	---	---	---	500	50	250
Kern	983	2 50	2,457	---	---	---	---	---	---
Lake	1,468	3 00	4,429	---	---	1,820	---	---	---
Lassen	500	3 00	1,500	---	---	---	---	---	---
Los Angeles	---	---	18,422	28,350	1 00	28,350	192,450	15	28,695
Marin	502	---	1,631	---	---	1,350	---	---	---
Mariposa	684	3 50	2,395	90	1 50	135	3,280	25	820
Mendocino	---	---	5,984	---	---	9,749	---	---	---
Merced	1,583	3 00	4,762	---	---	---	200	20	40
Modoc	911	3 12	2,764	---	---	---	---	---	---
Mono	40	8 00	320	---	---	5,350	---	---	---
Monterey	5,922	2 50	14,305	---	---	---	---	---	---
Napa	2,342	5 00	11,709	47,468	55	25,175	1,036,850	16	168,227
Nevada	920	5 00	4,600	---	---	15,230	10,140	19	1,885
Placer	1,908	4 31	8,220	4,647	94	4,402	24,503	21	5,358
Plumas	400	5 00	2,000	1,000	2 00	2,000	1,000	2 00	2,000
Sacramento	7,500	3 00	22,500	---	---	50,135	---	---	---
San Benito	---	---	2,565	400	1 50	600	---	---	1,000
San Bernardino	1,267	1 61	2,039	1,591	1 28	2,036	28,015	22	624
San Diego	665	3 00	1,995	3,154	1 72	5,646	7,210	19	1,347
San Francisco	---	---	9,215	---	---	574,902	---	---	---
San Joaquin	5,518	4 00	22,072	12,741	51	6,615	28,500	24	6,954
San Luis Obispo	2,114	2 78	5,868	1,588	2 83	4,500	890	48	430

San Mateo	943	2 81	2,655			5,475			725
Santa Barbara	1,814	2 00	3,628						
Santa Clara	5,993	5 00	29,965	55,450	1 00	55,450	116,625	15	17,493
Santa Cruz	1,492	3 35	5,026			5,949	26,380	16	4,317
Shasta	787	3 00	2,361	241	2 00	482	4,600	25	1,150
Sierra									
Siskiyou	700	4 00	2,800	1,000	2 00	2,000			
Solano									
Sonoma	4,520	5 00	22,000	27,390	80	20,891	945,320	18	170,168
Stanislaus	2,301	3 00	6,903			9,054	3,150	13	4,196
Sutter	2,516	3 35	8,432	197	2 90	572	14	4 28	60
Tehama									
Trinity	351	5 00	1,755	600	2 00	1,190			
Tulare	678	2 34	1,608	1,998	1 25	2,501	3,800	25	947
Tuolumne	725	5 00	3,625	500	1 50	750	40,334	15	6,050
Ventura	1,142		3,419	750		1,037	4,625		1,150
Yolo	2,800		8,400	3,200	50	1,600	14,000	20	2,800
Yuba	121	4 09	495	5,575	1 78	9,955	10,728	27	2,930
Totals			$343,828			$934,130			$474,159

SCHEDULE T—Continued.

COUNTIES.	BEEHIVES.			HONEY.			BROOMCORN.		
	Number.	Average Value.	Total Value.	No. Pounds.	Average Value.	Total Value.	No. Pounds.	Average Value.	Total Value.
Alameda									
Alpine	48	$3 00	$144						
Amador	500	1 00	500	4,000	$0 20	$800			
Butte	1,420		1,420						
Calaveras	560	1 00	560						
Colusa	314	1 50	474						
Contra Costa	300		450						
Del Norte	58	1 38	80						
El Dorado	136	1 10	150						
Fresno	602		1,560						
Humboldt	15		5						
Inyo	779	4 87	3,803						
Kern	483	2 00	966						
Lake			317						
Lassen	70		150						
Los Angeles	10,788	2 00	21,576						
Marin									
Mariposa	14	1 00	14						
Mendocino	149	2 00	298						
Merced	191	1 31	250						
Modoc	11	5 00	55						
Mono	40	5 00	200						
Monterey	2,950	1 00	2,950						
Napa	181	1 12	204						
Nevada	78	1 60	125						
Placer	236	1 55	366						
Plumas	150	2 50	375	3,000	15	450			
Sacramento			155						
San Benito	200	1 00	200						
San Bernardino	5,073	1 00	5,073	1,000	03	30	8,000	$0 01	$80
San Diego	21,298	1 23	26,358						
San Francisco									
San Joaquin	320	1 15	368						
San Luis Obispo	661	78	516						

San Mateo	152	1 48	225						
Santa Barbara	2,966	1 00	2,966						
Santa Clara	210	1 00	210						
Santa Cruz									
Shasta	160	1 00	160						
Sierra									
Siskiyou	1,000	3 00	3,000						
Solano									
Sonoma	87	1 00	87						
Stanislaus	166	2 00	332						
Sutter	100	1 00	100						
Tehama									
Trinity	10	2 00	20						
Tulare	1,852	2 00	3,691						
Tuolumne	450	1 00	450	180	50	90			
Ventura	6,974		13,809	7,060		314			
Yolo									
Yuba									
Totals			$94,712	15,240		$1,684	8,000		$80

Schedule T—Continued.

Counties.	Butter.			Cheese.			Flax.		
	No. Pounds.	Average Value.	Total Value.	No. Pounds.	Average Value.	Total Value.	No. Pounds.	Average Value.	Total Value.
Alameda									
Alpine									
Amador	20,000	$0 25	$5,000						
Butte									
Calaveras	5,240	20	1,048	1,260	$0 12	$155			
Colusa									
Contra Costa									
Del Norte									
El Dorado									
Fresno									
Humboldt									
Inyo									
Kern									
Lake									
Lassen									
Los Angeles									
Marin									
Mariposa									
Mendocino									
Merced									
Modoc									
Mono									
Monterey									
Napa	500	20	100						
Nevada									
Placer									
Plumas	10,000	25	2,500	5,000	15	750			
Sacramento									
San Benito									
San Bernardino									
San Diego									
San Francisco									
San Joaquin									
San Luis Obispo	13,100	27	3,500	3,200	12	381	27,000	$0 02	$575

San Mateo				900	7	65			
Santa Barbara									
Santa Clara				33,563	10	3,356			
Santa Cruz	311	20	62	2,600	10	260			
Shasta									
Sierra									
Siskiyou									
Solano									
Sonoma	420	20	81	210	10	21			
Stanislaus									
Sutter									
Tehama									
Trinity									
Tulare									
Tuolumne									
Ventura	250		25						
Yolo									
Yuba									
Totals	49,821		$12,316	47,733		$4,988	27,000		$575

SCHEDULE T—Continued.

COUNTIES.	GRAIN.			HAY.			HOPS.		
	No. Tons.	Average Value.	Total Value.	No. Tons.	Average Value.	Total Value.	No. Pounds.	Average Value.	Total Value.
Alameda	----	----	$261,360	2,355	$5 55	$13,050	----	----	----
Alpine	36	$40 00	1,558	102	15 00	1,548	----	----	----
Amador	2,000	33 00	66,000	6,000	14 00	84,000	50,000	$0 30	$15,000
Butte	13,748	----	274,960	1,471	----	9,800	----	----	----
Calaveras	50	24 00	1,200	150	15 00	2,250	600	15	90
Colusa	64,501	18 00	1,150,400	749	9 83	7,362	----	----	----
Contra Costa	15,424	20 00	308,480	1,822	6 00	10,935	----	----	----
Del Norte	28	29 90	837	127	7 38	837	----	----	----
El Dorado	----	----	350	97	20 00	1,940	----	----	----
Fresno	9,847	----	429,690	99	----	1,268	----	----	----
Humboldt	439	15 12	6,640	189	9 40	1,778	----	----	----
Inyo	537	35 67	19,155	925	2 94	2,723	----	----	----
Kern	3,620	20 00	72,654	----	----	6,197	----	----	----
Lake	366	20 87	7,641	----	----	----	----	----	----
Lassen	300	20 00	6,000	1,000	5 00	5,000	----	----	----
Los Angeles	----	----	83,840	255	10 00	2,550	----	----	----
Marin	186	----	3,755	40	----	200	----	----	----
Mariposa	23	29 26	695	89	16 17	1,440	----	----	----
Mendocino	816	18 82	15,360	555	8 76	4,864	----	----	----
Merced	15,410	19 00	293,301	577	6 00	3,506	----	----	----
Modoc	2,246	8 65	19,440	2,192	3 10	6,785	----	----	----
Mono	25	70 00	1,750	1,500	4 00	6,000	----	----	----
Monterey	8,675	12 00	104,100	----	----	----	----	----	----
Napa	1,360	20 33	27,245	422	8 16	3,447	15,000	10	1,500
Nevada	61	28 77	1,755	95	16 31	1,550	----	----	----
Placer	725	20 00	14,500	108	10 91	1,179	----	----	----
Plumas	500	20 00	10,000	1,500	10 00	15,000	----	----	----
Sacramento	----	----	97,115	3,100	5 00	15,500	----	----	4,350
San Benito	17,650	19 00	341,930	740	6 00	4,650	----	----	----
San Bernardino	----	----	501	312	10 90	3,400	3,000	3⅓	100
San Diego	131	28 00	3,755	153	12 00	1,983	----	----	----
San Francisco	----	----	67,038	----	----	9,390	----	----	6,750
San Joaquin	46,220	22 00	1,016,840	2,575	6 54	16,840	2,500	27	675

San Luis Obispo	548	20 16	11,295	229	7 40	1,695			
San Mateo	1,153	19 81	22,845	155	6 87	1,065			
Santa Barbara			20,010						
Santa Clara	15,798	25 00	394,950	4,131	7 00	28,917	8,000	30	2,400
Santa Cruz			12,141	159	6 88	1,095			275
Shasta	443	20 00	8,860	700	11 00	7,700			
Sierra	36	30 00	1,080	186	6 64	1,235			
Siskiyou	540	20 00	10,800	1,700	5 00	8,500			
Solano									
Sonoma	3,100	20 00	62,000	215	5 00	1,075			
Stanislaus	19,521	14 37	280,535			906			
Sutter	3,290	16 01	52,676	609	6 20	3,374			
Tehama	2,454		48,907	50		500			
Trinity	20	45 00	900	63	21 27	1,340			
Tulare	16,321	20 00	327,111	103	8 00	842			
Tuolumne	250	24 00	6,000	175	12 00	2,100			
Ventura	2,597		52,540	224		2,042			
Yolo	22,500	22 00	495,000	1,500	5 00	7,500			
Yuba	3,641	20 00	72,820	494	14 98	7,415			
Totals			$6,590,315			$324,273			$31,140

Schedule T—Continued.

Counties.	Tobacco.			Wool.			Wood.		
	No. Pounds.	Average Value.	Total Value.	No. Pounds.	Average Value.	Total Value.	No. Cords.	Average Value.	Total Value.
Alameda			$3,950						$9,380
Alpine							10,499	$2 40	25,031
Amador				300,000	$0 25	$75,000	25,000	5 00	125,000
Butte							4,500		7,350
Calaveras							7,080	2 00	14,160
Colusa				2,395	15	376	4,991	1 98	9,869
Contra Costa							500	3 50	1,750
Del Norte							199	1 06	212
El Dorado						160			4,470
Fresno									
Humboldt				1,280	25	320	431	1 15	494
Inyo							357	3 93	1,406
Kern									
Lake				64,100		1,134	1,100		5,845
Lassen							1,500		1,000
Los Angeles							76	4 00	304
Marin							778		1,819
Mariposa							1,630	2 86	4,675
Mendocino							4,642	1 72	8,009
Merced				52,000	10	5,200	1,230	1 74	2,145
Modoc							104	2 27	236
Mono							24,500	2 00	49,000
Monterey									
Napa				3,250	14	454	4,878	1 74	8,516
Nevada							20,521	1 32	27,100
Placer							24,937	2 24	56,066
Plumas				5,000	25	1,200	2,000	1 50	3,000
Sacramento						8,600			9,685
San Benito									
San Bernardino							175	2 53	442
San Diego							711	2 80	2,057
San Francisco						29,125			7,890
San Joaquin				11,500	11	1,265	4,048	2 94	11,901
San Luis Obispo							633	3 04	1,922

San Mateo							2,638	2 50	6,690
Santa Barbara							224	2 94	658
Santa Clara				12,000		12,000	6,670	4 00	26,680
Santa Cruz							9,499	1 11	10,574
Shasta							80	3 00	240
Sierra							275		325
Siskiyou							400	2 00	800
Solano									
Sonoma							5,120	1 50	7,680
Stanislaus							4,659	1 95	9,139
Sutter							1,541	1 50	2,310
Tehama									
Trinity							75	4 53	340
Tulare							1,312	1 83	2,402
Tuolumne				750	1 00	750	10	5 00	50
Ventura							25		75
Yolo									10,600
Yuba				56,560	14	8,060	2,509	2 57	6,455
Totals			$3,950			$143,644			$385,752

SCHEDULE T—Continued.

COUNTIES.	LUMBER.			COAL.			QUICKSILVER IN FLASKS.	FARMING UTENSILS.	GOODS, WARES, AND MERCHANDISE.
	Number Feet.	Average Value.	Total Value.	No. Tons.	Average Value.	Total Value.	Total Value.	Total Value.	Total Value
Alameda			$93,860	4,830	$6 06	$29,300		$30,475	$442,285
Alpine			763					727	6,750
Amador	4,000,000	$12 00	48,000						200,000
Butte	3,487,000		42,380					43,500	311,310
Calaveras	400,000	10 00	4,000				$750	8,345	174,550
Colusa	77,500	19 00	14,902					76,131	279,168
Contra Costa			9,500					87,535	178,560
Del Norte	984,000	8 27	8,137					1,227	
El Dorado	3,201,000	8 00	25,610					10,985	159,700
Fresno	428,000		23,500					25,420	148,642
Humboldt	2,397,500		19,670	50	8 40	420		12,230	307,873
Inyo	31,300	32 65	1,022					6,849	106,683
Kern			4,169					16,774	176,532
Lake	360,000	12 91	4,648					6,964	62,330
Lassen	150,000	6 00	900					4,550	36,000
Los Angeles	3,789,000	18 00	68,206					35,581	573,253
Marin			7,500					3,235	67,415
Mariposa	610,150	9 61	5,786					4,839	69,085
Mendocino	5,026,800		49,986					16,466	190,562
Merced	185,000	18 00	3,389	100	10 00	1,000		25,064	100,233
Modoc	29,810		3,964					8,919	93,250
Mono	350,000	12 00	4,200					5,760	184,425
Monterey	1,950,000	10 00	19,500					100,755	234,345
Napa	888,000	12 00	10,760	104	10 00	1,050	13,073	20,505	235,279
Nevada	6,222,090	7 22	44,885					5,235	438,260
Placer	2,919,000	7 41	21,640			500		11,437	185,673
Plumas	250,000		5,000				1,500	10,000	100,000
Sacramento			32,745					69,115	1,603,900
San Benito			2,100					19,346	80,764
San Bernardino	350	50 00	17					9,536	146,341
San Diego	2,389,000	16 00	38,205	420	6 00	2,600		7,079	352,693
San Francisco			214,275			158,635	2,700		17,199,398
San Joaquin			93,150	788	9 19	7,240		70,315	635,350

San Luis Obispo	645,000	20 00	12,900	80	10 00	800		15,198	156,055
San Mateo	485,000	11 54	5,600					7,890	64,260
Santa Barbara	200,000	13 90	2,780					16,045	148,783
Santa Clara	2,570,000	14 00	36,280	1,693	10 00	16,930	36,850	48,295	850,860
Santa Cruz			7,300	40	5 00	200		11,879	142,613
Shasta	300,000	9 25	2,775					16,741	167,807
Sierra								4,040	143,015
Siskiyou	450,000		3,600					34,250	295,000
Solano									
Sonoma	923,000	10 00	10,000					22,876	343,500
Stanislaus			9,770					32,951	236,965
Sutter								28,846	23,250
Tehama	2,000,000		20,000					35,682	206,091
Trinity	130,000	10 00	1,300					3,640	80,782
Tulare	269,000	20 00	6,400				1,860	34,936	194,115
Tuolumne	4,000,000		26,205					3,402	140,155
Ventura	865,000		19,026					13,443	104,875
Yolo			16,000					45,860	215,710
Yuba	2,818,000	15 00	21,275	23	60 87	1,400		15,270	309,415
Totals			$1,127,580			$220,075	$56,733	$1,146,143	$28,903,860

SCHEDULE T—Continued.

COUNTIES.	Machinery—Total Value	WAGONS AND OTHER VEHICLES.			Harness, Robes, Saddles, etc.—Total Value.	SEWING MACHINES.			Furniture—Total Value.
		Number.	Average Value.	Total Value.		Number.	Average Value.	Total Value.	
Alameda	$247,960	-----	-----	$178,449	$38,078	-----	-----	$20,921	$1,707,522
Alpine	5,830	82	$60 00	4,880	1,667	-----	-----	735	3,302
Amador	400,000	1,200	50 00	60,000	-----	1,000	$20 00	20,000	20,000
Butte	97,460	3,205	-----	139,200	47,140	-----	-----	12,300	15,400
Calaveras	7,400	1,272	50 00	63,600	15,250	724	15 00	10,860	60,125
Colusa	125,247	5,062	49 04	150,155	66,894	1,168	23 93	27,958	107,833
Contra Costa	35,440	-----	-----	86,432	24,445	-----	-----	14,280	73,450
Del Norte	10,335	210	41 33	8,680	3,528	135	9 95	1,343	17,940
El Dorado	3,405	1,301	55 00	71,550	9,970	705	19 26	13,580	71,990
Fresno	48,628	6,646	-----	87,537	22,728	810	-----	12,476	56,429
Humboldt	61,775	1,330	44 39	59,049	15,494	937	11 87	11,128	107,579
Inyo	9,775	487	62 05	30,220	10,560	171	18 75	3,207	17,670
Kern	12,520	903	48 65	43,936	11,479	327	16 72	5,468	25,332
Lake	11,582	-----	-----	42,117	8,605	-----	-----	7,877	35,930
Lassen	15,000	600	60 00	36,000	-----	250	20 00	5,000	14,450
Los Angeles	256,054	4,726	43 57	205,898	39,954	2,511	11 00	27,623	252,310
Marin	32,750	1,122	-----	57,585	3,825	290	-----	2,995	96,270
Mariposa	19,000	520	50 19	26,100	8,891	240	16 57	3,978	14,646
Mendocino	165,850	1,513	52 18	78,966	18,842	-----	-----	16,845	63,290
Merced	65,095	1,345	54 00	72,447	20,833	406	18 00	7,318	46,088
Modoc	37,335	800	48 50	38,804	14,034	343	16 20	5,558	24,180
Mono	208,242	400	40 00	16,000	5,575	450	15 00	6,750	12,375
Monterey	131,675	2,423	40 00	96,965	-----	3,195	10 00	31,950	120,765
Napa	55,445	2,302	52 10	119,945	25,060	748	18 74	14,023	176,620
Nevada	65,470	1,254	68 80	86,275	9,775	1,025	16 88	17,225	125,175
Placer	42,415	1,257	56 12	70,553	15,299	802	19 32	15,500	87,362
Plumas	5,000	1,000	50 00	50,000	6,000	-----	-----	5,000	40,000
Sacramento	153,935	5,290	40 00	211,600	42,155	2,300	15 00	39,500	388,090
San Benito	3,465	-----	-----	44,970	6,970	-----	-----	2,700	27,860
San Bernardino	43,776	1,473	-----	55,399	12,634	752	12 16	9,144	60,361
San Diego	32,501	1,520	38 00	57,615	9,544	524	10 00	5,404	46,970
San Francisco	1,513,306	7,679	-----	605,651	81,923	12,319	-----	167,118	4,590,152
San Joaquin	244,110	4,244	62 07	263,459	57,777	1,780	19 75	35,155	340,530

San Luis Obispo	32,723	1,405	51 51	72,376	19,469	711	15 45	10,986	48,224
San Mateo	56,520	1,581	39 68	62,745	15,795	365	9 53	3,470	190,545
Santa Barbara	32,175	1,556	50 03	77,857	17,955	-----	-----	7,969	63,633
Santa Clara	170,190	5,161	-----	268,330	45,395	-----	-----	27,960	375,915
Santa Cruz	44,790	1,468	45 70	67,123	13,154	716	11 88	8,513	70,811
Shasta	27,011	1,200	47 00	56,400	16,000	440	21 50	9,460	31,414
Sierra	7,300	255	-----	15,795	1,800	195	20 74	4,044	35,900
Siskiyou	102,000	-----	-----	43,238	9,800	300	15 00	4,500	37,500
Solano	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sonoma	83,500	45,100	60 00	268,395	39,125	1,815	10 00	18,150	257,320
Stanislaus	113,594	1,743	71 10	123,902	29,040	852	14 02	11,944	67,645
Sutter	45,615	1,748	47 86	82,660	17,749	547	22 24	11,654	32,698
Tehama	49,020	1,518	-----	59,479	-----	-----	-----	-----	54,390
Trinity	5,200	196	72 24	14,160	3,548	173	18 97	3,282	16,011
Tulare	99,092	2,666	45 00	120,878	25,358	1,046	12 00	13,096	45,066
Tuolumne	7,370	745	60 00	44,700	9,600	380	25 00	9,500	44,560
Ventura	30,952	951	-----	47,230	11,534	-----	-----	5,833	31,567
Yolo	64,800	-----	-----	95,650	34,600	-----	-----	18,560	102,125
Yuba	59,410	1,213	58 00	70,355	8,420	457	20 30	9,280	90,685
Totals	$5,199,043	-----	-----	$4,811,310	$973,271	-----	-----	$759,120	$10,444,005

Schedule T—Continued.

Counties.	Consigned Goods—Total Value.	Firearms.			Fixtures of Saloons, Stores, and other business places—Total Value.	Libraries—Law, Medical, and Miscellaneous—Total Value.	Musical Instruments.		
		Number.	Average Value.	Total Value.			Number.	Average Value.	Total Value.
Alameda	$8,200	------	------	$3,750	$32,055	$21,740	------	------	$7,395
Alpine	------	35	$11 00	399	726	650	------	------	540
Amador	------	------	------	------	10,000	2,000	150	$100 00	15,000
Butte	------	------	------	4,120	4,700	8,460	------	------	14,300
Calaveras	------	950	6 00	5,700	7,962	1,500	------	------	6,825
Colusa	------	1,115	23 46	26,161	20,505	13,302	342	105 48	36,074
Contra Costa	------	------	------	2,050	14,242	4,460	------	------	20,250
Del Norte	------	155	13 10	2,031	4,712	1,895	------	------	------
El Dorado	------	483	12 50	6,040	16,315	4,550	------	------	------
Fresno	------	------	------	7,067	4,065	5,068	------	------	14,890
Humboldt	------	494	10 25	5,063	10,985	5,804	234	25 00	5,811
Inyo	------	188	12 25	2,305	7,025	1,215	------	------	2,082
Kern	------	362	9 13	3,304	7,740	2,365	------	------	1,650
Lake	------	------	------	5,961	3,380	1,585	------	------	11,765
Lassen	------	------	------	2,535	1,175	------	------	------	4,320
Los Angeles	------	------	------	5,750	28,700	14,915	------	------	55,100
Marin	------	------	------	435	4,680	3,655	------	------	1,150
Mariposa	------	396	10 01	3,966	6,465	860	------	------	2,723
Mendocino	3,086	703	13 77	9,681	8,420	4,900	------	------	21,840
Merced	1,060	293	12 45	3,648	5,240	2,600	135	87 00	11,783
Modoc	------	------	------	3,572	3,810	2,745	------	------	4,201
Mono	------	------	------	2,150	8,375	4,325	------	------	1,145
Monterey	------	1,625	------	11,875	9,635	------	324	75 00	24,300
Napa	2,440	612	11 38	6,968	7,430	9,510	191	57 00	10,880
Nevada	------	------	------	3,655	23,670	11,585	------	------	49,125
Placer	------	------	------	7,825	6,680	5,525	245	125 10	30,650
Plumas	------	200	10 00	2,000	10,000	6,000	------	------	10,000
Sacramento	------	------	------	9,380	97,470	29,910	------	------	11,030
San Benito	------	------	------	------	4,780	700	------	------	6,420
San Bernardino	------	413	------	3,954	19,464	5,570	------	------	8,368
San Diego	------	441	8 00	3,729	12,910	4,085	------	------	998
San Francisco	265,793	956	11 00	10,934	764,430	224,467	------	------	638,489
San Joaquin	1,235	520	17 55	9,126	79,478	14,537	955	108 60	103,713
San Luis Obispo	125	520	10 76	5,596	24,750	2,430	149	64 56	9,620

San Mateo		125	11 00	1,375	4,630	8,000			1,605
Santa Barbara				2,704	6,055	6,070			17,450
Santa Clara	2,500	583	20 00	11,660	32,475	21,615			107,363
Santa Cruz		244	10 50	2,562	7,675	3,500			
Shasta		260	14 00	3,640	19,871	1,866	141		8,178
Sierra		30	31 00	940	2,775	1,395			3,250
Siskiyou		850	10 00	8,500	5,600	900	108	60 00	6,480
Solano									
Sonoma	1,250	1,310	7 00	9,250	113,680	7,200	823	100 00	83,490
Stanislaus	250			5,888	17,480	5,670			29,443
Sutter		460	12 68	5,835	435	1,101	172	50 29	8,650
Tehama				3,500	5,750	1,000	150		15,000
Trinity		126	16 74	2,110	1,385	825			1,122
Tulare	575	642	10 00	6,287	29,325	3,905	243	62 00	15,291
Tuolumne				2,500	4,210	1,345			3,050
Ventura				3,467	5,395	3,165			9,335
Yolo				6,400	22,890	2,500			44,600
Yuba		76	15 60	1,150	20,550	5,055	36	61 66	2,220
Totals	$286,514			$258,498	$1,572,155	$498,025			$1,498,964

SCHEDULE T—Continued.

COUNTIES.	WATCHES.			Railroad Rolling Stock not Assessed by State Board of Equalization.—Total Value.	Steamers, Vessels, Watercraft.—Total Value.	STORESHIPS AND HULKS.			Other Property.—Total Value.
	Number.	Average Value.	Total Value.			Number.	Average Value.	Total Value.	
Alameda			$34,758	$5,750	$783	1	$	$6,700	$204,444
Alpine	49	$35 00	1,702						1,194
Amador	1,000	20 00	20,000						
Butte	2,706		21,400						17,152
Calaveras	1,122		11,220						22,952
Colusa	907	34 18	31,005						15,577
Contra Costa			4,122	23,105	9,950				14,876
Del Norte	631	6 24	3,943		925				17,603
El Dorado	552	28 51	15,840		300				34,815
Fresno	608		11,350						
Humboldt	625	22 96	14,355	17,300	20,337				44,560
Inyo	184	29 69	5,463		500				
Kern	242	21 96	5,315						
Lake			4,234		3,531				27,459
Lassen	180	25 00	4,500						34,772
Los Angeles	1,150	18 81	21,636	22,150	16,000				13,122
Marin	138		5,616		61,510				21,308
Mariposa	193	25 31	4,885						5,621
Mendocino	594	29 50	16,880	33,425	3,600				101,536
Merced	326	27 00	8,782						
Modoc	197	19 22	3,786						2,710
Mono			3,340	20,710	500				
Monterey	3,043	10 00	30,425						
Napa	882	21 83	19,256		325				87,917
Nevada	429	52 62	22,575						62,800
Placer	633	35 86	22,705						
Plumas	400	10 00	4,000						
Sacramento	3,100	15 00	60,500		3,965				39,274
San Benito			1,480						11,007
San Bernardino	613	17 10	10,482						8,800
San Diego	461	24 00	11,085	474,110	15,100				47,032
San Francisco	8,180		286,770	275,085	3,799,185				
San Joaquin	1,312	34 50	45,264		3,249				22,882

San Luis Obispo	348	18 96	6,599	25,000	495				43,955
San Mateo	233	24 20	5,640		450				165,995
Santa Barbara	354	21 40	7,579						31,116
Santa Clara	1,520	25 50	38,760	10,090					
Santa Cruz	376	24 00	9,139						109,440
Shasta	221	23 40	5,167						
Sierra	130		6,850						
Siskiyou	575	20 00	11,500						
Solano									
Sonoma	1,630	15 00	24,450	21,200					1,390
Stanislaus	595	30 00	17,822						24,765
Sutter	358	23 84	8,534		1,985				19,843
Tehama									4,341
Trinity	193	38 67	7,464						1,355
Tulare	548	17 00	9,594	5,000					2,024
Tuolumne	185	34 00	6,290						
Ventura			5,851						2,130
Yolo			14,550						22,323
Yuba	285	32 22	9,185						3,450
Totals			$963,651	$932,925	$3,942,690			$6,700	$1,291,540

DETAILED STATEMENTS.

Expenditures for Postage and Contingent Expenses for Thirty-third Fiscal Year, ending June 30, 1882.

1881.		
September 20	E. W. Maslin—Stamps and papers	$13 00
October 18	H. O. Waite—Bulletin	6 60
October 18	Warren Dutton—Telegraphing	5 10
November 2	M. R. Beard—Stamps	50 00
November 2	J. L. King—For attorney fee paid by him	50 00
December 21	E. W. Maslin—Papers and stamps	11 25
1882.		
January 19	H. O. Waite—Bulletin	6 60
January 19	E. W. Maslin—Stamps	50 00
April 6	Western Union—Telegraphing	38 35
June 30	E. W. Maslin—Box rent Post Office, telegraph bills, Examiner and Record Union to date	35 55
		$266 45

Expenses for Traveling in Thirty-third Fiscal Year, ending June 30, 1882.

1881.		
September 20	J. D. Heiskell	$32 05
September 20	J. L. King	169 75
	M. M. Drew	80 55
	D. M. Kenfield	64 60
	Warren Dutton	82 75
	J. L. King	82 00
	E. W. Maslin	15 00
1882.		
June 27	E. W. Maslin	112 50
	D. M. Kenfield	158 13
	William Johnson	126 00
	J. L. King	105 00
		$1,028 33

STATE OF CALIFORNIA,
County of Sacramento. }

I, E. W. Maslin, Clerk of the State Board of Equalization, being duly sworn, depose and say the following is a correct statement of the manner in which the appropriation for postage, and contingent, and traveling expenses for the Board for the thirty-third fiscal year were expended, the vouchers for which are on file in the Controller's office.

E. W. MASLIN.

Subscribed and sworn to before me, this twenty-third day of December, 1882.

C. N. POST,
Deputy Clerk Supreme Court.

REPORT

OF THE

Board of Trustees of the State Normal School,

FOR THE

Year ending June 30, 1882.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

REPORT OF THE TRUSTEES OF THE STATE NORMAL SCHOOL.

To his Excellency GEO. C. PERKINS, *Governor:*

SIR: In accordance with the requirements of the Political Code, we have the honor to submit the report of the schools under our charge, for the thirty-second fiscal year, ending June 30, 1881, and the thirty-third fiscal year, ending June 30, 1882.

For a statement of the disbursements of the moneys under our control, we beg leave to refer your Excellency to the several reports of the Secretary of the Board, and for a summary of the scholastic work of the school to the reports of the Principal, all of which are herewith transmitted.

For the thirty-first and thirty-second fiscal years the appropriation for the support of the Normal School was $66,600. When the school was removed to the new building we believed we could carry on the work somewhat more economically, which has proved true. We therefore asked and the Legislature granted an appropriation of $60,000 for the support of the school for the thirty-third and thirty-fourth fiscal years. This, with the tuition moneys received from the training school and the preparatory class, we supposed would be sufficient.

None of us foresaw the rapid growth of the school. The increase in attendance, from three hundred and fifty-eight during the thirty-second, to four hundred and forty-three in the thirty-third fiscal year—an increase of about twenty-four per cent—made it next to impossible to meet the expenses for that year. For the thirty-fourth fiscal year there is a prospective attendance of more than five hundred. The appropriation made and all the tuition moneys are wholly inadequate to enable us to meet the necessary expenses for that year.

Should the attendance continue to increase—and there is every reason to believe that it will, for the demand for thoroughly trained teachers is on the increase—a much larger appropriation will be needed.

We therefore ask for the next two fiscal years an appropriation of $80,000, believing that this amount will be no more than sufficient to meet the necessary current expenses. For the Branch Normal School, which will have an attendance of, say one hundred, $30,000 will be needed for current expenses during the two years.

In the construction of the building at San José we were enabled to return about $1,000 to the treasury. We confidently expect to complete the Branch Normal School building at Los Angeles within the appropriation. That we might be sure to do so, before fully adopting the plans, we procured estimates from three independent competent builders, and we were assured that it could be completed for the amount of the appropriation. But an unforseen advance in the cost of building material, notably in lumber and millwork, with delays caused by inclement weather, and other circumstances over which we had no control, have rendered it impossible to complete the building. The most we could do, with all the aid we could get, is to fit the building for occupancy. It is unpainted (save one coat upon the outside), outside and inside, and has no complete arrangement for heating. It lacks sewerage and water supply. To complete the building so as to have it safe, healthful, and convenient, an additional appropriation of $10,000 will be necessary.

That your Excellency may fully understand the difficulties which we had to encounter, and to do justice to those who aided us, the following statement should be made:

When it became evident that we could not get the building ready for occupancy with the fifty thousand dollars appropriated, we were able to rent four class rooms, that will not be immediately needed for the Normal School, to the City Board of Los Angeles. For these, and necessary dressing rooms, they advanced us the rent for two years; this gave us two thousand dollars. But even this was not enough, and finally, Mr. I. W. Hellman, President of the Merchants' and Farmers' Bank, generously placed one thousand dollars more at our disposal; with this, we were enabled to open the school. The ten thousand dollars asked for will complete the building and leave enough to settle this equitable claim.

With the appropriation for improving the grounds around the Normal School in San José, we have drained and graded the grounds, laid out and graded drives and walks, bored two artesian wells, and erected tanks with windmills for water supply, laid irrigation pipes, and planted a large part of the grounds with shrubs and trees. The whole is inclosed by a neat iron fence, which, while affording protection, does not obstruct the view. The grounds are now an ornament to the city, a credit to the State, and if well kept will play an important part in the general work of education in the hool.

In conclusion, we are happy to be able to report that the work of the Normal School is in the highest degree satisfactory, and we believe the necessary appropriations for continuing its work will be readily granted. Referring your Excellency to accompanying reports for more detailed information, we have the honor of subscribing ourselves, very respectfully, your obedient servants,

A. S. EVANS,
Vice President Board of Trustees.

CHAS. H. ALLEN, Secretary.

REPORTS

OF THE

SECRETARY AND PRINCIPAL

For the Thirty-second Fiscal Year.

REPORT OF THE SECRETARY.

Office of the Secretary of the
Board of Trustees of the State Normal School,
San José, June 30, 1881.

To the Board of Trustees of the State Normal School:

Gentlemen: I have the honor of presenting the following financial reports, for the thirty-second fiscal year, ending June 30, 1881. All bills paid have been ordered by direct vote of the Board, or audited by the Executive Committee, and their action duly sanctioned by the Board, and proper vouchers are on file in this office, or with the State Controller:

Report of Receipts and Expenditures for Building at San José.

Amount of insurance on old building		$50,000 00
Amount appropriated for the erection of a building for the use of the Normal School		100,000 00
Amount expended for erection of the building, as per vouchers on file	$148,936 95	
Amount returned to State Treasury	1,063 05	
	$150,000 00	$150,000 00

Report of Receipts and Expenditures from Appropriation for Support of the State Normal School, and from Tuition Moneys, Thirty-second Fiscal Year.

Amount of appropriation		$33,300 00
Amount of tuition money on hand July 1, 1880		935 51
Amount of tuition money collected during year		3,365 45
Amount paid for salaries of teachers and janitor	$28,609 00	
Amount paid for books and stationery	797 38	
Amount paid for furniture and supplies	2,372 91	
Amount paid for printing	2 00	
Amount paid for freight and expressage	136 96	
Amount paid for gas and water	171 05	
Amount paid for rent of office	125 00	
Amount paid for advertising	22 50	
Amount paid for postage and box rent	71 05	
Amount paid for insurance	500 00	
Amount paid for repairs on High School building	168 66	
Amount paid for Museum expenses	66 00	
Amount paid for Commencement expenses	86 35	
Amount paid for moving and dedication	150 20	
Amount paid for cases	29 54	
Amount paid for incidental expenses	141 25	
Amount paid for compensation of Auditor and Executive Agent	600 00	
Amount paid for labor and repairs	278 40	
Amount paid for discount on warrants	420 84	
Amount paid for supplies	74 88	
Balance of appropriation returned to Treasury	10 99	
Tuition moneys on hand at close of year	2,766 00	
	$37,600 96	$37,600 96

REPORT OF THE PRINCIPAL.

To the Board of Trustees of the California State Normal School:

GENTLEMEN: I have the honor of submitting the following report of the school under your charge, for the school year ending June 2, 1881:

The total number of pupils enrolled in all departments is 590, distributed as follows: Senior Class, 52; Middle Classes, 181; Junior Classes, 199; Preparatory Class, 57; and in the Training School, 101. The average enrollment in the Normal School classes is 367, with an average attendance of 358.

These pupils have come from forty-five different counties, there being but seven counties in the State not represented, and these counties are remote and sparsely populated.

For admission to the Senior Class we have examined 16; admitted 12.

For the Middle Class we have examined 57; admitted 29.

For the Junior Class we have examined 186; admitted 152.

Whole number rejected on account of too low scholarship, 66.

We present a class of thirty-four for graduation, all having completed the full course of study, training, and practice. By your action taken at the close of last year, no Middle Class, with elementary diplomas, is graduated this year.

We have worked, during the year, under somewhat adverse circumstances, but are tolerably well satisfied with the results. The Senior and Middle Classes have lost something in our not having had room for their practice in chemistry and teaching, but we believe them to be well qualified for the work of teaching.

On the second of May, we opened in the new building, much to the satisfaction of both pupils and teachers. Our occupancy has demonstated its convenience, and, when fully furnished, we believe that for adaptation to the wants of a Normal School, as well as in healthfulness, it can hardly be surpassed. We look forward with pleasure to the work of the coming year, feeling that it can be far more efficient than ever before.

Miss Addie Murray filled acceptably the position made vacant by the leave of absence granted to Miss Cornelia Walker, until Christmas vacation. Miss Walker then reported for duty, and Miss E. A. Barnes was elected to fill the vacancy made by the resignation of Miss Chamberlain. On the twenty-fifth of March, Miss Frances L. Webster resigned her position, and the place has been temporarily filled by Miss Murray. Miss Ruth Royce, a former graduate, has been engaged during the year as a substitute teacher, and has greatly relieved me during the time I have been compelled to devote to the building.

A permanent teacher will have to be elected to fill the place made vacant by the resignation of Miss Webster.

With the appropriation made for the current expenses of the school, and for furnishing the building, we shall be, we hope, fully able to carry on the school acceptably to all during the next two years.

I have no recommendations to make in reference to changes in the teachers, and return to them, as well as to you, gentlemen, my sincere thanks for the hearty coöperation given in all good work in the school.

I remain, very respectfully, your obedient servant,

CHAS. H. ALLEN, Principal.

REPORTS

OF THE

SECRETARY AND PRINCIPAL

For the Thirty-third Fiscal Year.

REPORT OF THE SECRETARY.

Office of the Secretary of the
Board of Trustees of the State Normal School,
San José, June 30, 1882.

To the Board of Trustees of the State Normal School:

Gentlemen: I have the honor of presenting the following financial reports for the thirty-third fiscal year, ending June 30, 1882. All bills paid have been ordered by direct vote of the Board, or audited by the Executive Committee, and their action duly sanctioned by the Board, and proper vouchers are on file in this office, or with the State Controller:

Report of Receipts and Expenditures from Appropriation for the Support of the State Normal School, and from Tuition Moneys, Thirty-third Fiscal Year.

Amount of appropriation		$30,000 00
Amount of tuition moneys on hand July 1, 1881		2,766 00
Amount of tuition moneys collected during year		3,707 95
Amount paid for salaries of teachers and janitor	$29,630 00	
Amount paid for salary of night watchman	126 00	
Amount paid for stationery	433 73	
Amount paid for books and periodicals	394 42	
Amount paid for printing diplomas	80 00	
Amount paid for printing circulars and tickets	33 75	
Amount paid for insurance ($50,000, three years)	1,000 00	
Amount paid for fuel	599 30	
Amount paid for gas	181 65	
Amount paid for postage, freight, express, telegrams, etc	283 16	
Amount paid for carrying mail	25 00	
Amount paid for painting and varnishing	147 15	
Amount paid for apparatus	60 00	
Amount paid for chemicals	64 47	
Amount paid for janitor's tools and supplies	85 77	
Amount paid for Museum supplies	22 60	
Amount paid for plumbing	48 35	
Amount paid for step ladders	31 80	
Amount paid for advertising	54 50	
Amount paid A. D. Telegraph Co., box rent and repairs	44 00	
Amount paid for Commencement expenses and decorations	64 65	
Amount paid for seals for diplomas and Library	16 75	
Amount paid for sundry repairs and incidentals	63 95	
Amount paid for compensation of Secretary of Building Committee and Committee on Improvement of Grounds	600 00	
Amount paid for discount on warrants	23 75	
Amount paid for deficit in Furnishing Fund	78 56	
Balance of tuition moneys on hand July 1, 1882	2,280 64	
	$36,473 95	$36,473 95

Report of Expenditures from Furnishing Fund, Thirty-third Fiscal Year.

Amount of appropriation		$10,000 00
Amount paid for desks, settees, tables, chairs, and carpenter work on same	$4,287 45	
Amount paid for cases for Library and Museum	1,338 11	
Amount paid for gas fixtures and plumbing	803 34	
Amount paid for carpets and curtains	659 95	
Amount paid for pianos and organ	657 00	
Amount paid for books	434 56	
Amount paid for lumber and labor on chemical room and furniture	261 60	
Amount paid for hardware for cases and desks	184 49	
Amount paid for freight and hauling on furniture	93 10	
Amount paid for flag	61 50	
Amount paid for clocks	38 00	
Amount paid for mats	32 50	
Amount paid for stove and pipe for office	21 25	
Amount paid for ventilators	12 00	
Amount paid for mirrors	9 05	
Amount paid for apparatus	1,184 66	
Balance paid from tuition		78 56
	$10,078 56	$10,078 56

Report of Receipts and Expenditures for Improvement of Normal School Square, San José.

Amount of appropriation		$25,000 00
Amount received from sale of old fence		506 00
Amount expended for labor and salaries	$7,138 56	
Amount expended for tools and repairing tools	315 23	
Amount expended for gravel, loam, and manure	4,408 10	
Amount expended for irrigation, including wells, tanks, barn, windmills, and irrigation pipes	3,807 44	
Amount expended for drainage	213 70	
Amount expended for seeds and plants	660 74	
Amount expended for iron fence	8,322 10	
Amount expended for boiler for engine	225 35	
Amount expended for miscellaneous items	259 73	
Balance on hand	155 05	
	$25,506 00	$25,506 00

Report of Receipts and Expenditures for Building Branch Normal School at Los Angeles.

Amount of appropriation		$50,000 00
Rent received from City of Los Angeles (advanced)		2,000 00
Amount advanced by I. W. Hellman		1,000 00
Cash returned from S. H. Kent, Superintendent		100 00
Cash returned from Current Expense Fund		223 25
Cash from material sold		522 00
Amount expended for building—vouchers Nos. 1 to 185	$53,769 13	
Balance on hand	76 12	
	$53,845 25	$53,845 25

REPORT OF THE PRINCIPAL.

To the Board of Trustees of the California State Normal School:

Gentlemen: I have the honor of submitting the following report of the school under your charge, for the school year ending June 1, 1882:

STATISTICAL.

Examinations for admission during the year have been as follows:
For Senior Class, 16; admitted, 12.
For Middle Classes, 77; admitted, 46.
For Junior Classes, 175; admitted, 139.
Total number examined, 268; admitted, 197.
Rejected, 71.
Graduates of high schools—admitted, 16.
Graduates of other institutions, 6.

Pupils examined represent forty counties of the State, besides two from Nevada, one from Oregon, two from Washington Territory, one each from Wisconsin, Michigan, and Minnesota.

Forty-seven counties of California have been represented in the school during the year; only five, namely, Del Norte, Modoc, Siskiyou, Trinity, and Yuba, have had no representatives here.

On the ninth of August we enrolled 425; highest enrollment during the year, 475; average enrollment, 456; average daily attendance, 443.

The average percentage of attendance is somewhat less than should be expected in a school of this grade, but is explained by the fact that during a part of the year there has been a greater amount of illness among the pupils than ever before. In a previous report, enrolled upon the minutes, the causes of the illness have been discussed, and it has been conclusively shown that our building and surroundings are in excellent sanitary condition, and that the ill health was but a part of the sickness so prevalent throughout the State during the early part of the present year.

GENERAL.

We present a class of seventy-four for graduation—the largest class ever presented since the school was organized. It is a notable fact that the attendance is becoming larger in the Advanced Classes, the Middle Classes this year having outnumbered the Junior Classes. This is, in itself, a sign of progress, showing that the school holds its pupils. The number admitted to the Middle and Senior Classes on examination, shows also that the schools of the State are doing better work. During the last half of the year we have carried on four Junior, four Middle, one Sub-Senior Class, and a Senior Class so large that it has been necessary to make two classes of it in most recitations.

The matter has been laid before the Faculty, and has been fully discussed, and we unanimously recommend that hereafter two classes be graduated each year—one at the middle of the year, and one at the close. Two very important gains will result from this. First, it will relieve the pressure upon the Senior Class; and second, pupils who fail to reach the required grade in that class at the close of a term, can be graduated regularly with an additional five months' work, whereas it is now necessary for them to wait a whole year before they can be regularly graduated. This change involves somewhat more labor on the part of the Faculty, but we believe the gain will more than compensate for it.

The grade of the school is now as high as we can make it and have it possible for the grade of the High Schools of the State to complete the course in one year. Many of those who attempt it now fail. It may not be considered out of place for the Board to require such pupils to take a year and a half for the work. This will have to be done with a corresponding raising of the grade in our own school, to give more time for practice teaching and other desirable work in the Senior Class.

Further than this I have no recommendations to make. With our building and grounds in such excellent condition, we look forward to pleasant work in the future; and with the prospective opening of the Branch Normal School at Los Angeles, the people of the State may well feel confident that the work of preparing trained teachers for our schools will be more and more effectually carried on from year to year.

Returning thanks to each and all of the Faculty, who have so cordially and faithfully labored during the year, and to you, gentlemen, for your kindly consideration and support, I subscribe myself,

Very respectfully, your obedient servant,

CHAS. H. ALLEN, Principal.

FIFTEENTH REPORT

OF THE

BOARD OF DIRECTORS AND OFFICERS

Of the California Institution for the Education of the

DEAF AND DUMB, AND THE BLIND,

FOR THE

Twenty-four Months ending June 30, 1882.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

BOARD OF DIRECTORS.

JOHN A. STANLY, President	Oakland.
A. K. P. HARMON, Vice President	Oakland.
ISAAC WORMSER, Auditor	San Francisco.
GEO. D. DORNIN	Berkeley.
JOHN F. HOUGHTON	Oakland.
H. A. PALMER	Secretary and Treasurer.

OFFICERS OF THE INSTITUTION.

PRINCIPAL,

WARRING WILKINSON, M. A.

TEACHERS OF THE DEAF AND DUMB,

GEO. B. GOODALL, M. A.,
HENRY FRANK,
DOUGLAS TILDEN,
ANNIE B. CARTER,
ANNIE WARREN,
MARY A. DUTCH,
KATE CRANDALL.

TEACHER OF ARTICULATION,

CARRIE E. HANDY.*

TEACHER OF DRAWING,

THEOPHILUS D'ESTRELLA.

TEACHERS OF THE BLIND,

CHARLES T. WILKINSON,
ANGELIQUE R. GOODALL.

TEACHER OF MUSIC,

GEO. B. GOODALL, M. A.

DOMESTIC DEPARTMENT.

P. WHEELER, M. D.	Physician.
W. E. ZANDER	Clerk.
Mrs. HARRIET B. WILLARD	Matron Girls Home.
Mrs. M. L. BILLINGS	Matron Boys House No. 1.
Miss J. OSGOOD	Matron Boys House No. 2.
Miss M. A. WISEMAN	Matron Blind Boys.
Miss MARY E. WRIGHT	Assistant Matron Girls Home.
Miss M. E. SHARR	Housekeeper.

MECHANICAL DEPARTMENT.

FRED. HANSEN	Engineer.
E. P. PIKE	Carpenter.

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*Resigned. Vacancy filled by the appointment of Miss Annie B. Garratt, of New York.

REPORT.

Office of the California Institution for the
Education of the Deaf and Dumb, and the Blind,
Berkeley, December 1, 1882.

To his Excellency, George C. Perkins, *Governor of California*:

Sir: The Directors of the California Institution for the Deaf and Dumb, and the Blind, herewith respectfully submit their report concerning their trust and its management for the two years ending June 30, 1882.

The report of the Principal gives in detail the internal history of the Institution. By reference to that report it will be seen that the total number of pupils under instruction during the two years is one hundred and sixty-six, of which one hundred and thirty-two were deaf and dumb, and thirty-four were blind. The admissions of new pupils for the same period have been thirty-eight, while thirty have been graduated and discharged, leaving on the rolls at the end of the academic year one hundred and thirty-six. Since the opening of the term nine have been admitted, making the total number on the rolls at the date of writing one hundred and forty-five. An examination of the reports for the last seventeen years shows that the annual increase has been a little over six per cent, which gives the Directors reason to suppose that they will have one hundred and sixty-five pupils to provide for and educate during the coming two years.

The educational results of the Institution during the term under consideration have been very gratifying. No breaches of discipline worthy of official notice have occurred; the health of the pupils has been good, and the annual examinations, which have been purposely searching and severe, prove that there has been faithful work on the part of the pupils and teachers. The branch of articulation has been added to the course of study within the last year, and though the expense of carrying on the Institution has been increased thereby, the Directors feel that the results justify such expenditure. The discussion of the comparative merits of the German and French systems of instruction in the Principal's report will be found interesting. What the future may demonstrate the Directors are not prepared to say, but it is their earnest desire and determination to adopt and use every device and resource that experience may approve for promoting the welfare and intellectual progress of the unfortunate children committed to their charge. In carrying out this determination the Directors believe they will have the approbation of the people of this State.

The Treasurer's statement herewith submitted exhibits the financial condition of the Institution and its various funds, and the total receipts and disbursements of the same. The Principal's dissections give the items of expenditure and cost thereof. By examining the gross and itemized statements the following exhibit is made:

DISBURSEMENTS.

Current expenses	$75,645 26
Salary, Secretary and Treasurer	1,000 00
Interest	1,957 67
Collection charges, etc.	139 21
Permanent improvements	4,471 66
Total	$83,213 80

RECEIPTS.

Balance unpaid warrant, June 30, 1880	$1,911 89
State Treasury, for support including unpaid warrants	76,000 00
Principal	4,309 60
Total	$82,221 49
Deficit	992 31

In connection with this statement the Directors desire to call your Excellency's attention to the fact, that but for the interest account included in the above exhibit, there would be a handsome surplus to the credit of the institution. The interest account is largely increased in this fiscal period, because of lack of money in the State Treasury with which to pay the warrants issued by the Controller against the appropriation made for the educational building. As mechanics and laborers depending upon daily labor for daily bread could not be paid in warrants, the Directors borrowed the means to meet the constantly accruing indebtedness and hypothecated the warrants therefor. It is hoped by rigid economy to cancel the deficit during the present year.

The Directors take great pleasure in reporting the completion of the educational building, for which an appropriation was made at the last session of the Legislature. Like the preceding structures, it is plain in elevation and architecture, but substantial in construction and material. It is as nearly perfect in the matter of convenience, comfort, and safety, as thoughtful consideration could suggest. At the same time provision is made so that enlargement is possible at reasonable expense when increase of pupils demands more accommodation.

The original drawings of the architects called for wooden steps, redwood interior finish, and two coat plastering. The Directors ordered granite entrances, white cedar finish, and three coat plastering; paying for the same out of the accumulated interest of the Durham bequest. The cost of the building with these improvements is $43,262 17.

The Directors desire to call the attention of your Excellency and of the Legislature to the *vital* need of the Institution, viz.: the establishment of a mechanical department. Although this function of the Institution has been kept steadily in view since the fire of 1875, circumstances have intervened to prevent its accomplishment. But the Directors feel that the time has come when justice to the pupils, and a wise economy on the part of the State, demand the inauguration of a thoroughly equipped and efficient trade school, in connection with the Institution and to supplement the work of the class room. In order to obtain all desirable information upon this subject and enable them to act intelligently, the Directors sent the Principal to visit the various similar institutions and technical schools of the country. His report will be published in due time. The Directors believe that the use of wood-working tools should be first taught, offering as it does a wider range of practical utility for the whole class of deaf mutes, and being fundamental to so many occupations. A careful estimate of the cost of the tools and plant has been made, which amounts to $2,500, for which sum the Directors respectfully ask your Excellency's recommendation.

The Directors also ask for an appropriation of $5,000, with which to erect and equip a bakery, which shall at the same time combine accommodations for the instruction of the girls in cooking. It is proposed to make this department thorough in its organization and instruction, so that those girls who have finished their school life may be prepared to enter upon domestic duties and at remunerative wages.

When the Legislature appropriated money for the erection of the educational building no provision was made for furnishing it. The Directors respectfully ask for an appropriation of $1,500, to be expended for illustrative apparatus.

An appropriation is also needed for fitting up the gymnasium under the refectory. No class of students require systematic drill in physical exercises more than those whose loss of sight make their movements slow and constrained. For about $1,000 efficient apparatus can be obtained such as has been invented by Dr. D. A. Sargent, and adopted in the Harvard Gymnasium at Cambridge, though of course far more limited in variety and cost.

The Directors have given much anxious thought to the matter of water supply during the past two years, but are constrained to "report progress" rather than a definite conclusion of their labors. They have, however, determined to run the tunnel at least one hundred feet further in hopes of increasing the supply from that source. They are also awaiting the result of a survey and estimates of cost from the State Engineer for bringing water from the creek in Telegraph Cañon, and of storage reservoirs on the hills back of the Institution. It is believed that $5,000 will suffice to do this work, and the Directors respectfully ask for this sum.

The Principal's report gives the improvements that have been made in the grounds so far as the limited means at command would allow. The Directors earnestly hope that your Excellency's personal observations of the unsightly grounds and inclosures of the Institution may urge you to make such recommendation in this matter as your judgment approves. It certainly is not creditable to the commonwealth, as has been said in a former report, "that one of its most valuable properties, situated in the most visited and sightly portions of the State, and close to its largest cities, should lack an adornment somewhat in keeping with the noteworthy buildings which have been erected."

With the increase of population, both of this Institution and its vicinity, the question of how to dispose of the attendant sewage has become of vital importance. Some time since the Directors of the Institution invited the coöperation of the Regents of the University in the investigation of this question, and in the devising of a plan to accomplish the end in view. A joint committee was appointed, but has taken no action, owing to the unavoidable absence from the State of one of the committee upon the part of the Board of Regents.

As matters now stand, the sewage of this Institution is a serious nuisance, and one which justly provokes the criticism of some of the neighboring inhabitants. No private individual would be allowed to maintain such a nuisance in any part of the civilized world, and the State of California cannot afford to longer maintain it. The Directors respectfully suggest that the State Engineer be required to present to the coming session of the Legislature, at as early a date as possible, some plan by which the sewage of this Institution may be safely disposed of, with estimates of cost, and that an appropriation may be made to carry that plan into effect as speedily as possible.

Subtracting the expenditures for permanent improvements, the annual cost per pupil for the last two years has been about $280 per capita on an average register of one hundred and forty pupils. To pay for the increased cost of instruction in articulation and the proposed mechanical department, the Directors ask for $44,000 a year for the next two years. This estimate is upon a basis of one hundred and sixty-five pupils, at $266 66 per capita.

Tabulated, the needs of the Institution are:

For support and for instruction, including instruction in trades, per annum	$44,000 00
Special appropriations:	
For tools and machinery for shops	$2,500 00
For erection and equipment of bakery, including cooking school	5,000 00
For increasing water supply	5,000 00
For illustrative apparatus	1,500 00
For gymnasium	1,000 00
For improvement of grounds	10,000 00
	$25,000 00

By the will of the late Louis Straus, of San Francisco, the Institution for the Deaf and Dumb and the Blind was made beneficiary to the amount of five thousand dollars, which sum the executors of the will paid to the Directors with most commendable promptness. The conditions of the bequest requires that the principal shall be set apart and called the "Straus Fund," and shall be invested in bond and mortgage upon real estate situated in San Francisco. These conditions have been complied with, and the money safely loaned upon the security required by the testator.

Mrs. J. Mora Moss has presented to the Institution a beautiful portrait of her late husband, who was for ten years, and till his lamented death, the honored President of this Board. For this valued memorial of their friend and associate, the Directors desire to thank the generous donor. The portrait has been hung in the assembly room, where it will be a perpetual reminder to the pupils of one who, by his gracious courtesy of manner, integrity of life, kindly sympathies, and warm interest in the institution, is entitled to their grateful remembrance.

In conclusion, the Directors desire to commend this Institution and all its interests to the favorable consideration of your Excellency and the Legislature about to convene.

Respectfully submitted.

JOHN A. STANLY,
President.

REPORT OF THE PRINCIPAL.

To the Board of Directors of the California Institution for the Deaf and Dumb, and the Blind.

GENTLEMEN: I herewith submit my report for the twenty-four months ending June 30, 1882, the same being the twenty-first and twenty-second years of the existence of the California Institution for the Deaf and Dumb, and the Blind:

NUMBER OF PUPILS.

Since the date of my last report the movement of pupils has been as follows:

On the rolls June 30, 1880:

DEAF AND DUMB.		
Boys	64	
Girls	39	
		103
BLIND.		
Boys	13	
Girls	12	
		25
Total both classes		128

The admissions since same date have been:

DEAF AND DUMB.		
Boys	16	
Girls	13	
		29
BLIND.		
Boys	3	
Girls	6	
		9
Total admissions		38
Total under instruction		166

There have been graduated and discharged:

DEAF AND DUMB.		
Boys	11	
Girls	9	
		20
BLIND.		
Boys	6	
Girls	4	
		10
Total discharged		30
On rolls June 30, 1882		136
Admitted since opening of term		9
On rolls November 1, 1882		145

HEALTH.

The health of the pupils has been good; an epidemic of measles took place during the Winter of 1880–81, and for a time seriously interfered with the schools, but the disease was mild in form, and was more of an annoyance and interruption than anything else. Two cases out of forty, one of inflamed eyes, the other of ears, required treatment by a specialist, but both pupils recovered in time to pass the usual school examinations at the end of the term.

On the thirtieth of January, 1882, Orelia Botto, a deaf and dumb girl, from Amador County, died of consumption. She had always been of a delicate constitution, but gave no cause for special apprehension until a few months before her death. During her last hours her friends were at her bedside, and bore witness to the tender care and solicitude which sought to ease her suffering and prepare her for the last great change.

THE SCHOOLS.

The progress of the schools for the past two years has been as satisfactory as could be expected in view of our limited quarters and equipment. The corps of teachers has suffered little change. Miss Nettie Stewart has resigned, and Miss Anna B. Carter, of Boston, and Miss Annie Warren, one of our own graduates, have been added to the staff.

The course of study has not been materially changed, nor have the methods of instruction. An important addition, however, to our work has been made since my last report by the introduction of articulation as a branch of instruction. The time had come when the growth of the Institution, and the number of semi-mutes in school, seemed to justify the employment of a special teacher for this department, and after considerable correspondence with eastern co-laborers, the services of Miss Caroline E. Handy, formerly of New York, were secured, and she entered upon her work in October, 1881, with a zeal and enthusiasm which gave every assurance of success.

To those unacquainted with the history of deaf-mute instruction, articulation is supposed to be some new device for educating the deaf and dumb, and bringing them into more intimate fellowship with their kind. On the contrary, it is more than one hundred years since Samuel Heinecke opened a school in Saxony, and practiced this art. Lacking the philosophical insight of De l'Épée, Heinecke attached an undue value and importance to articulate utterance, and indeed, went so far as to assert that there could be little, if any, intellectual development without it. He, therefore, directed his energies to the cultivation of an artificial or mechanical speech. His method found general acceptance in the subsequent German institutions, and has held the ground there more or less securely to the present day. The more tenable principles of De l'Epée, however, took possession of the French, Italian, English, and American schools, and in these countries the sign language was for more than a century the recognized and accepted instrument of deaf-mute development and instruction.

But of late years there has been an extraordinary revival of, not the theory, but the methods of Heinecke and Periere. An apparently moribund practice has suddenly become active and aggressive. It has taken almost complete control of the Italian schools, and a large portion of the French schools, and has a quite numerous following in England and America.

For the benefit of readers who may not have seen what I have heretofore published on this subject, I will endeavor to state, as fairly as possible, the merits and defects of the two systems. It is claimed for the French, or natural method as it is sometimes called:

First—That it is more general in its application, inasmuch as it reaches all deaf mutes.

Deafness is often a phase of a mental abnormalism that is only one remove from idiocy, and every institution has its percentage of pupils who never arrive at a use of correct language, and who leave school utterly unversed in the grammatical structure of speech. They have a large vocabulary of idiographs of those simple uninflected nouns and verbs which many philologists believe to have been the germs of primitive speech. They will string these together with an odd sprinkling of articles and prepositions that set at defiance all rules of Murray; here is a specimen of such composition, of which, however, the meaning is intelligible enough: "Man take gun, go woods, see squirrel sitting tree. Man shoot squirrel, squirrel fall ground, dog bite squirrel, bring man. Man put pocket in, go to home, cook, eat good." A moral obliquity and its sequence they will state thus: "Bad boy say lie. God angry, whip boy; go heaven no." And yet such jargon as this may represent years of hard labor. To call it labor lost, would probably be doing injustice to faithful teaching. With no more power of verbal expression than the above, there may be a moral culture obtained through the language of signs, which renders the deaf mute amenable to civil and divine law. He will be able to understand much more than he can express, just as a person may read Latin and French fluently, and yet be quite unable to shape his thoughts correctly in those idioms. He may have learned a handicraft that will afford a means of support and make him a productive and useful citizen of the commonwealth. Such results cannot be justly called failure.

A second and large class includes those congenital deaf mutes of fair ability, who represent the average intellect of lads in the common schools. They go to make up the rank and file of life. On graduation their attainments in language are respectable; not wholly free from inelegancies of diction, but whose use of written language is sufficient for all purposes of conversation and the transactions of ordinary business. Their knowledge of arithmetic, geography, history, etc., is about equal to that of pupils in the first and second grades of the San Francisco schools. The lighter literature of books, and the narrative portions of the Bible, are open to their understanding. Without the power of close reasoning, and ignorant of the technologies of science, they are, nevertheless, well up in general news. They are great readers of the daily papers, especially of the telegraphic and items columns; form decided political opinions, and use the ballot quite as intelligently as the average voter. They do not know much about Darwin or Herbert Spencer, but they can "evolve" a well made shoe or piece of furniture, which is, perhaps, of more consequence to the body politic. They become, according to social conditions, farmers, mechanics, or laborers; marry and rear families; open bank accounts, and fulfill all the functions of creditable citizenship, with no larger proportion of pauperism and crime than will be found in an equal number of normal population. These two classes represent at least seventy per cent of the congenitally deaf pupils in institutions for the deaf and dumb. They are believed to be beyond the reach of any system of instruction based upon articulation.

Second—It is claimed on one side, and will not be denied on the other, that a far greater intellectual culture can be obtained in a limited time by the French method. The average time of a deaf mute's stay in school is not over six years. He enters the institute ignorant of every means of communication, save the few natural gestures which love will invent between mother and child. He has mental pictures, but no symbols for them. He does not know his own name, but his companions soon christen him with a sign, suggested often by some physical feature or peculiarity of dress. Had Cromwell been a deaf mute, his traditional wart would have settled his case. At table our young deaf mute finds that certain motions bring to his fellows meat, bread, potatoes, etc., and he soon learns to make his own wants understood in the same way. The attrition of minds now begins, of which education is the sequence. He listens to the stories of others, and soon essays to narrate in broken, incoherent language, like a baby learning to talk, his own childish experiences, which an older pupil, catching the idea, will put in shape for him. The exercises of the classroom are an infinitesimal part of the intellectual development which is rapidly going on in the more boisterous exercises of the playground. The news of the day is discussed at the dinner table. The wit and wisdom of popular speech become current in the vernacular of signs. There are silent Selwyns, whose last post-prandial joke is the talk of the institution, and mute *raconteurs* who never lack an audience to wonder at the tales of—

> Cannibals that each other eat;
> Of Anthropophagi, and men whose heads
> Do grow beneath their shoulders.

The phenomena of nature, the miracles of meteorology, are explained in graphic gestures. Moral obligations—the penalties of violated law, civil and divine—are recognized, and the idea of a God, best comprehended under the sweet similitude of fatherhood, for the first time takes possession of his soul. And all this practical education, with its elevating tendencies, is acquired before the deaf mute can express more than the simplest wants in written language, and while the pupil of Heinecke is learning the meaningless powers of letters, and undergoing a vocal culture that has no more effect on the mind than the muscular gymnastics of an athlete.

Third—The education of a deaf mute by the French method is cheaper, and unless it can be shown that there is a better way, this consideration ought to have some weight. It follows from the nature of the German system that instruction must be more individual and special, and at least twice as many teachers are required to obtain satisfactory results. Using the language of signs, in a well graded class one teacher can manage from fifteen to twenty pupils, while seven or eight will task all the energies of an instructor confined to articulation. Lip reading is far more difficult of acquirement than mere speech. It requires acute perceptions to catch the delicate variations of muscle involved in uttering sounds. A person must be near enough to the speaker to look into his mouth, and note the position of the tongue and the lines of the lip—no easy thing in these days of moustache and beard. It will be readily seen, then, that class teaching, to a great extent, and lectures entirely, must be dispensed with. For this reason, the best results are often obtained by home instruction, under the care or guidance of a devoted mother or governess. Undoubtedly the finest lip reader in America is a daughter of an ex-Governor of Rhode Island—a young lady who lost her hearing at the age of three or four years, and who was never in a school for the deaf and dumb save as a visitor.

The objections to the French system are:

First—That it cultivates rather than represses what is known in the profession as "deaf-mutisms," or those peculiarities of expression which come from the literal translation of idioms; that it stimulates the habit of thinking in signs—compelling the deaf mute to translate what he reads into signs before the words become cognitions; whereas, a person cannot be said to be master of a speech until he can think in its symbols.

With rare exceptions every deaf mute, however well educated, will, in the course of a page of written discourse, betray his infirmity by the use of some word or phrase, not ungrammatical perhaps, but not idiomatic. By the casual reader it would be pronounced the work of a foreigner, struggling with the difficulties of our English tongue; to the practical eye of a teacher it has a deeper significance, and reveals an abnormalism inherent to the deaf mute mind. The same "deaf-mutisms" crop out in artificial speech that we find in the written language of Sicard's Pupil. The reason is evident. In both the eye has to substitute the ear, and no one sense can do the work of another. The eye may be trained to read the motions of the lips, or of the hands—in either case, it is a sign language—but the cognitions thus obtained are not the same as those derived through the ear. A blind man talks glibly of colors, but one need not be told that his conception of red, for instance, is unlike that of a seeing person. The written formulas of the senses may be interchangeable; their cognitions are not. Here, then, is the radical and irremediable difference between the congenital deaf mute and the hearing child—a difference which no system of education is competent wholly to remove. As intertranslation of languages is considered one of the best means of culture in all advanced schools, it will not be necessary to take up the other member of the objection.

Second—That the French system does not free the deaf mute from that isolation engendered by his misfortune; that the use of pencil and paper for all the intercourse of life is a cumbersome substitute for the "living speech," and practically cuts him off from social delights, and drives him to seek the society of his fellow unfortunates, where his abnormal tendencies and use of inverted language are confirmed and intensified.

That there is an element of truth in this objection cannot be denied, but it is a part of the sorrowful burden which the child of silence is compelled to bear. There is something common to all the world which he can never know. On his deadened ear the multitudinous voices of life and nature fall unheeded. He dwells an unwilling and enforced hermit in the very centers of trade and commerce. In this busy world few people have time or inclination to stop and write a conversation. Neither do they care to study out the slow and painful speech of one taught articulation. Curiosity leads one now and then to test the acquirements of the deaf, but it is done in the same wearisome commonplaces, rarely extending beyond a dozen well worn questions. No wonder that the deaf mute loves to meet those who can converse with him in his own beautiful and expressive language, compared with which our speech seems dead and cold. But that such indulgence impairs his use of written language is not true. One might as well say that Luther was unable to defend his Wittenburg theses in Latin, because he chose to employ his mother tongue in the intimacies of domestic life.

The foregoing we believe to be an honest statement of the arguments for and against the method adopted wisely, we think, in American schools for the deaf and dumb. But, on the other hand, those who sneer at the German system are probably little aware of what patience and skill have done in the way of cultivating an artificial speech. A method, though based upon untenable philosophy, that has held its ground for a hundred years, cannot be barren of results. There are many children made deaf by disease, after they have obtained a knowledge of speech. Unless cultivated, this knowledge is speedily lost. They are classed in the profession as semi-mutes. The distinction between them and the congenitally deaf is marked, and in comparing methods of instruction should never be lost sight of. The semi-mute is normal in his habits of thought. He generally takes quickly to the use of idiomatic language. His vocal organs, having once been exercised, can continue or resume something of their natural office, though always in an imperfect way. To all such, articulation, with lip reading, is something more than an accomplishment, and should be taught. A few will be brought into general communication with the world. More will be able to understand their immediate and familiar associates. A small percentage of the congenitally deaf with unusual flexibility of the vocal organs and remarkable powers of perception, may, by large expenditure of time and labor, be taught to use the limited vocabulary that is needed for the little retail business of life. It is almost incredible how small a stock of words and phrases will serve this purpose. And if it is objected that this use of a mechanical instrument is gained at the expense of something better, yet many a mother would be willing to sacrifice a trifle of higher culture in her silent child, to hear him say the tender phrase, "I love you," uttered in harsh unmusical tone though it may be.

What part articulation may play hereafter in American schools for the deaf and dumb, is still a question, but that it will ever supersede signs as a method of instruction is not believed by any intelligent teacher who knows, by practical experience and use, the value of the sign language. No other means has been devised whereby the intelligence of the congenital deaf mute can be so rapidly developed as by signs, nor with equal economy of time and money. No other method has been demonstrated as capable of reaching the *whole* class of deaf mutes. It is, therefore, my firm belief—a belief based upon twenty-five years of careful observation and investigation—that the sign language will hold its preëminence in American institutions as an instrument of instruction in spite of reported successes achieved in the continental schools of Europe, or exceptional schools in our own country—successes generally obtained with selected pupils, and oftener exaggerated by ill informed visitors who do not know the difference between a congenital and a semi-mute, nor how to apply the tests of genuine merit. But while my faith in the value of the sign language is undiminished, I am also convinced that articulation is to be an important and permanent factor in deaf-mute instruction.

The question then presents itself, whether this branch shall be taught in schools organized upon articulation as a basis to the exclusion of signs, or shall it be grafted upon the institutions already organized and conducted upon the methods of De l'Epée? It should be noted that speech is not a method, but a branch of deaf-mute education, like French or arithmetic. I see no reason, therefore, why an intelligence developed by signs may not facilitate the acquisition of articulate language as well as of any other branch of study.

The results obtained in this Institution justify this belief. On the twenty-fifth day of October, 1881, thirty-six pupils were selected from the whole school. The causes of deafness among these were as follows:

Congenital	17
Deaf at two years	4
Deaf at three years	6
Deaf at four years	4
Deaf at five years	1
Deaf at seven years	3
Deaf at ten years	1
Total	36

Of this number seven had more or less speech; three had imperfect hearing; the rest were entirely without speech. Six classes were formed, each class receiving one hour a day instruction. At the end of seven months more than half of those pupils who had no speech when they began, could read the simple monosyllables of the First Reader, and distinguish a great variety of sentences from the teacher's lips. Six or eight were able to learn, and did intelligibly, at a public exhibition, deliver the following little speech:

"Ladies and gentlemen, I am well. I am happy to see you. I am glad that I am learning to talk. I hope I shall talk better by and by. Good night."

These results compare favorably with any work seen during my recent tour of observation among eastern institutions, and go far to prove that signs are no hindrance to the acquisition of speech.

BUILDINGS AND IMPROVEMENTS.

The Legislature at its last session made an appropriation of $40,000 for the erection of a school building, which was to complete the plan adopted six years ago. As this sum was less by $33,000 than was asked for, it became evident that the original drawings must be modified to meet the requirements. The law specified that the building should be completed for the sum named in the bill. How to keep within the limits of the law, to provide for present needs, and at the same time to provide for the enlargement which future increase of pupils will make necessary, was a problem not easy of solution. It seemed a pity to mar the unity of the plan as originally devised. To erect a cheap wooden structure, after beginning with the fire-proof buildings, would have subjected the Directors to sharp criticism, and yet the terms of the law were explicit. After much anxious thought it was determined to carry out the whole ground plan of the school building, one story in height. This gives accommodation for all the pupils now on the rolls, and for the probable increase for some years.

By throwing two class rooms together with adjoining hall and staircases, a comfortable assembly room thirty-five by fifty feet is made, which will seat two hundred pupils.

This arrangement gives opportunity for permanently grading and laying out the grounds. The building is not unsightly, and as the ceiling joists have been made purposely heavy to carry an upper floor, the capacity of the school can be doubled by simply raising the roof another story, and the whole group of buildings will then present that unity and harmony of elevation which was intended by the architects. The estimates for construction, as submitted by Messrs. Wright & Sanders, aggregated $38,999 75. The specifications called for two-coat plastering; redwood finish for the interior, the ordinary sizes for upper ceiling joists, and wooden steps at the various entrances. For an additional sum of $3,147 78, it was found that a third coat of plaster could be put on; white cedar be substituted for redwood; heavy timbers, capable of supporting a second-story floor, could be put in; and solid and massive granite take the place of the wooden steps which so cheapen a brick or stone structure.

The money to make these valuable improvements was voted by the Board from the interest of the Durham Fund, which had accumulated sufficiently to justify this use and action, so that there is no deficiency to ask for from the Legislature.

The building is admirably adapted to its purpose. It is well lighted and contains an executive office, library, Principal's office, and clerk's room, ten class rooms, with hat and cloak rooms for each sex. There are ten exits. The school rooms are provided with wall slates. A system of electric bells and speaking tubes connects all the rooms with the executive office, and telephones with a central annunciator in the same office communicate with the three homes, refectory, and Principal's house, by which many of the advantages of a congregate building are combined with the cottage plan. A Harvey hot water heating apparatus, with columnar radiators in each room, supplies the gentle warmth needed in our genial climate.

The completion of this system of buildings is a matter of congratulation to the friends of the institution and the people of the State. As a property it is worth more to-day than it has cost. As an instrument of educating the deaf and blind, and providing for their comfort and safety while in school, it has no superior, and but few if any equals in the United States.

MECHANICAL INSTRUCTION.

With the completion of the buildings comes the opportunity of realizing the long deferred hope of the management in regard to handicrafts for our pupils. Up to the seventeenth of January, 1875, when a disastrous fire destroyed the institution, a Mechanical Department had been part of the curriculum of study, and had always been considered an essential element towards that perfect equipment for self-supporting manhood and womanhood which it was the aim of the institution to provide for its graduates. The fire referred to compelled a temporary suspension of the mechanical feature of our work, and the shop building itself was utilized for domestic and educational purposes.

For seven years the work of reconstruction has gone on, and the pupils have waited with commendable patience for those mechanical facilities which had to be sacrificed to the exigencies of the present. But the former shop stands to-day empty and ready to revert to its original use. Now comes the query how best to accomplish the end sought. In order to obtain information upon the subject the Board determined to send the Principal to visit manual training schools and those institutions in the East which make industrial education a part of their work, with a view of his making such recommendations as observation and accumulated experience might suggest.

In pursuance of this action by the Board, I left Oakland on the fourth of May and returned on the twenty-third of June. During that time I visited thirty-one technical schools and institutions for the deaf and blind. I was everywhere received with the utmost cordiality and kindness. I found a widespread spirit of inquiry upon the subject-matter of my visit, and where my colaborers had nothing novel to offer in the way of shops or suggestions, they all expressed hearty sympathy with the purpose of my journey. For the results obtained by that journey, and the recommendations submitted, I beg to refer the Board to the special report upon the subject of "Manual Training," heretofore presented. I can only add that I look upon this question as most vital to the successful conduct of the Institution, and I trust the Board will urge upon the Legislature the pressing need of making ample provision for this department of instruction.

EMPLOYMENT FOR GIRLS.

I took pains during my eastern tour to visit the various cooking schools which have obtained a footing now in most of the large cities. It seems to me that this device solves the problem of "what to do with our girls?" Everybody must eat, and the proper and economical preparation of food becomes a question, not only of household but of political science. "Tell me what you eat and I will tell you what you are," says the clever author of the *Philosophe du Gout*. It has to do with domestic happiness and national prosperity. It has been said that enough is wasted every day in American households—saying nothing of impaired digestion and doctors' bills—to feed the French nation. Good cooks are always in demand. It is the one employment where wages constantly increase; where the demand outruns the supply; where steam and machinery do not come into competition. Were our girls thoroughly competent cooks I could place every one within twenty-four hours in good families, and at remunerative wages. If they are to become wives and administer households of their own, the knowledge is equally valuable in promoting thrift and making homes happy.

One object in the establishment of cooking schools is to elevate and make respectable the employment of house service. The scarcity of good servants is doubtless due to the disinclination of intelligent young women to engage in that which carries with it a certain social degradation. Somehow it has come to be regarded as more respectable to starve in a garret making shirts at ten cents apiece than to earn twenty-five dollars a month and board in doing housework. That this is a conventional and unreasonable view is evident when looked at from another standpoint. Lucretia, spinning in the midst of her servants; Queen Clothilde preparing her lord's dinner, are among the historical pictures considered as illustrative of the golden age of nations, and worth celebrating in song. A wife may do the cooking, washing, and general housework for her husband and half a dozen children, and yet be visited by those who "keep a carriage." From this it would appear logically to follow that it is not the work but its relations which give it social character. If done for one's own family it is reputable; if done for another and for pay, it is menial and disreputable. Yet the lawyer may receive his fee, the minister his stipend, the doctor his "honorarium," the bookkeeper, clerk, agent, the female teacher, shoptender, telegraph operator, and shirtmaker, may take the wages of labor and not be smirched by the contact. It is believed that making the science of domestic economy and management educational, will tend to elevate the occupation in public esteem and do away with the absurd prejudice now attaching to house service. Making any trade or occupation a matter of education to a certain degree ennobles it. Blacksmithing will rise to something of the dignity of a profession when a man, to achieve it, goes through a professional training in veterinary science, as he ought, and all the kindred branches in chemistry and physics which relate to the materials of his art and their methods of working. So with cooking and house service. Educate and refine the servant, and you render respectable the service. Of course the common cry of "lifting up people above their sphere" will be raised. It is a false alarm. Some employers may be compelled to treat servants with more respect. Perhaps it may be necessary to train some mistresses in the arts of courtesy and consideration, but it will be easier to treat a housemaid with politeness when the maid herself learns by culture that the dignity or disgrace of an employment comes, not from the work, but from the manner of its doing. This should be the end and aim of American schools and civilization to teach the dignity, not of labor but of the laborer; that all things honest are reputable; that the man is superior to his uses; the woman to her work; and that knowledge is valuable in and for itself, whether one serves in Congress or kitchen.

In view of the future of many of the girls in this Institution, I strongly urge the establishment of a department where cooking and household management shall be taught as an occupation. To be of such use as to justify the expense, the instruction should be thorough and practical. It will require a special teacher, and all the appliances in the way of stoves, ranges, ovens, and kitchen utensils. As all the food prepared can be utilized in the Institution, the additional outlay for material will not be large. In this respect we have an advantage over the ordinary city cooking schools.

It will be necessary to ask an appropriation this Winter for the erection of a bakery and its proper outfit. It will not cost very much more to provide an experimental kitchen under the same roof, and thus an important item can be added to the equipment of the Institution. I earnestly hope that the Board will join with me in urging this matter upon the attention of the Legislature.

IMPROVEMENT OF GROUNDS.

During the past two years work on the grounds has been limited to such things as were absolutely necessary, and could be done with the few men which scanty means enabled us to employ. A good deal of stone retaining wall has been built, and a large amount of grading around the new home for girls, the refectory, and the new school building has been done. About a thousand fruit and nut-bearing trees have been set out. Some road making has been done, with considerable sewering and pipe laying for the disposal of storm water, but the whole place looks crude and unfinished; and it is hoped that such appropriations will be made by the coming Legislature as will suffice to inclose and improve this valuable property, somewhat in keeping with the dignity of the State and the beautiful site which this Institution occupies. A suitable fence is a primary need. The present inclosure was a cheap affair and never did afford protection to the orchard or grounds. About fifteen hundred feet of granite coping is required to finish the retaining walls already built. A proper entrance gate and roadway, a terrace wall and granite steps, with the requisite filling, are also necessary. The cost of these improvements will be about $10,000.

WATER SUPPLY.

This perplexing problem is still unsolved. Since my last report the Board determined to continue the tunnel, work upon which had been suspended for two years. At the distance of about eight hundred feet a heavy stream was struck which yielded for a time fifty thousand gallons a day, but it has gradually diminished in quantity until barely five thousand gallons per diem is obtained from that source. Of course this amount is valuable, but not sufficient for the needs of the Institution. Two wells have been dug; one was a failure; in the other a good stream was found, but work in that direction was stopped when the tunnel promised so much. It is proposed now to bring the water from Telegraph Cañon to a reservoir to be constructed on the hillside back of the present spring. By an amicable arrangement with neighbors who have riparian rights, the Institution is to have one half of the flow of that stream. It is believed that from this source, from the spring and the tunnel, and the well referred to, a supply adequate to present and prospective needs can be secured. Two additional brick cisterns for rain water have been built, and the laundry is thus supplied about nine months of the year. It is proposed to build another at such a height on the hill as to supply all the houses during the Winter season with soft water for baths and especially the heating apparatus, and thus avoid the scale which the mineral water of all this region precipitates in boilers. To carry out these improvements will cost about $5,000.

FINANCIAL MATTERS.

My dissections of accounts for the two years ending June 30, 1882, show the following receipts and disbursements:

RECEIPTS.

Balance of unpaid warrant, June 30, 1880	$1,911 89
From State treasury, for support, including unpaid warrants	76,000 00
From Principal	4,309 60
Total	$82,221 49

DISBURSEMENTS.

For salaries and wages, as per dissections	$34,992 21
For groceries and provisions, as per dissections	16,773 23
For clothing, as per dissections	1,492 42
For furniture, as per dissections	2,162 23
For building and repairs, as per dissections	4,234 27
For fuel and lights, as per dissections	6,795 93
For laundry, as per dissections	2,150 87
For stable and dairy, as per dissections	3,514 74
For miscellaneous, as per dissections	3,529 01
For Treasurer's salary	1,000 00
For interest	1,957 67
For collection charges, etc.	139 21
For overdraft on warrant	35
Total ordinary expenses	$78,742 14

EXPENDITURES FOR IMPROVEMENTS.

Cement, lime, sand, and gravel	$303 97
Dump carts, two	141 00
Fruit trees	105 30
Granite coping	500 35
Labor	3,089 17
Sewer pipe and drain tile	331 87
	$4,471 66
Total disbursements	$83,213 80

This statement shows a deficit of $992 31 for the two years. It is due to the large interest account which the Institution has had to pay, in consequence of there being no money in the State Treasury with which to cash warrants upon presentation. But for this unforeseen circumstance, there would have been a surplus of about one thousand dollars. Whether we shall be able to make good this deficit during the current year, it is impossible to predict. If the warrants are not paid upon demand, and the enhanced cost of meat continues, the deficit will be increased rather than diminished. For the coming two years it will be necessary to ask for $44,000 per annum. The increase of $4,000 is to pay for the cost of instruction in the department of articulation and in the trade school, which it is hoped the Legislature will provide for.

SPECIAL APPROPRIATIONS.

For tools and machinery in trade school	$2,500 00
For erecting and furnishing bakery and cooking school	5,000 00
For increasing water supply	5,000 00
For improving grounds	10,000 00
For illustrative apparatus	1,500 00
For fitting up gymnasium	1,000 00
	$25,000 00

The expenditure of this sum will put the Institution in thorough working order, and place it in the front rank with the best schools of the country. I wish to call special attention to the need of a gymnasium. No class of people require a systematic physical training more than the deaf and the blind. The tendency of the blind is to huddle together in warm corners, to sit with bowed heads and bent shoulders, to walk with arms thrown forward, and consequent sunken chests. To counteract all these tendencies to weak lungs vigorous exercise should be provided and made compulsory. We have room under the refectory, which, at small expense, can be made to serve the purpose of a gymnasium admirably well, and a thousand dollars will fit it up and provide the necessary apparatus.

ACKNOWLEDGMENTS.

We are again under obligations to the Central Pacific Railroad Company for free transportation given to those of our pupils whose means are limited. Also, for a special train to carry the pupils and teachers to and from Shell Mound Park on the annual May picnic. Our thanks are also due to Mr. Ludwig Siebe for the free use of the Park and all its appliances and amusements on the day referred to. Dr. R. E. Cole has continued those gratuitous services in dentistry which have relieved so many pupils from suffering during the ten years past.

The Institution has received, for the use of the pupils, the following papers, for which thanks are returned: San Francisco Examiner, daily; Sacramento Bee, weekly; Deaf-Mute Journal, New York; Vis-a-Vis, Ohio; Gazette, Virginia; Deaf-Mute Advance, Illinois; Deaf-Mute Hawkeye, Iowa; Deaf-Mute Optic, Arkansas; Mute Journal, Nebraska; Mirror, Michigan.

With many thanks to the Directors for their unselfish zeal in promoting the welfare of the Institution and its pupils, and for their generous sympathy and coöperation, which have lightened my own labors, this report is respectfully submitted.

WARRING WILKINSON, Principal.

INSTITUTION FOR THE DEAF AND DUMB, AND THE BLIND,
BERKELEY, November 1, 1882.

PRINCIPAL'S DISSECTIONS OF CURRENT EXPENSES FOR TWENTY-FOUR MONTHS, ENDING JUNE 30, 1882.

Groceries and Provisions.

Allspice, 6 pounds	$1 80
Ammonia, 24 quarts	6 00
Anise and coriander seeds	1 60
Bacon, 289 pounds	41 06
Baking powder, 120 pounds	51 64
Bath brick, 65	4 70
Beans, 2,231 pounds	55 09
Bread	104 00
Buckwheat, 250 pounds	10 00
Butter, 7,900 pounds	2,475 42
Cahvey, 243 pounds	66 65
Canned goods, 62 dozen	157 40
Capers, 3 dozen	6 25
Carb. Soda, 24 pounds	2 88
Cheese, 1,022 pounds	180 59
Chicory, 406 pounds	28 92
Chocolate	10 18
Cider, 4 gallons	2 00
Citron, 42 pounds	11 45
Cocoanut, 7 pounds	2 45
Coffee, 1,657 pounds	238 06
Cooking wine, 13 gallons	13 00
Cornstarch, 62 pounds	8 30
Crackers, 1,853 pounds	90 82
Cracked wheat, 1,000 pounds	29 90
Amount carried forward	$3,600 16

Amount brought forward	$3,600 16	
Cranberries, 3 barrels	43 30	
Cream tartar, 12 pounds	3 50	
Currants and raisins	70 05	
Corn meal, 1,115 pounds	24 80	
Curry powder	2 50	
Eggs, 90 dozen	34 45	
Extracts, assorted, 84 pints	84 00	
Fish, fresh, 5,117 pounds	327 12	
Fish, salt, 1,100 pounds	79 50	
Flour, 352 barrels	1,797 74	
Fruit, dried	330 16	
Fruit, fresh	346 23	
Gelatin, 2 dozen	3 38	
Ginger, 12½ pounds	3 70	
Hams, 1,438 pounds	229 78	
Honey	23 65	
Herbs	1 25	
Hominy, 450 pounds	17 75	
Hops, 16 pounds	3 50	
Horseradish	8 25	
Hulled corn, 468 quarts	29 25	
Lard, 2,400 pounds	358 58	
Macaroni, 44 boxes	45 95	
Mace, 5 pounds	3 75	
Meat, 70,139 pounds	4,572 14	
Molasses, 158 gallons	57 79	
Mustard, 74 pounds	16 15	
Nutmegs, 7 pounds	7 20	
Oat meal, 600 pounds	31 00	
Olive oil, 12 dozen	68 79	
Oysters	19 45	
Pearl barley, 175 pounds	8 38	
Pepper, black, 140 pounds	30 30	
Pickles, 25 gallons	9 55	
Potatoes, 62,471 pounds	891 45	
Poultry	170 83	
Potted meats	4 62	
Rice, 1,650 pounds	99 00	
Sago, 75 pounds	5 50	
Saleratus, 12 pounds	72	
Salt, table, 3,050 pounds	26 00	
Salt, coarse, 2,330 pounds	16 57	
Saltpeter, 60 pounds	9 50	
Salt pork, 100 pounds	14 50	
Sapolio, 12 dozen	15 25	
Sauce, Worcestershire	16 75	
Silicon, 10 dozen	12 12	
Soap, brown, 4,414 pounds	357 93	
Soap, castile, 1,002 pounds	115 23	
Soap, toilet	8 75	
Spices	24 70	
Split peas, 100 pounds	4 50	
Sugar, brown, 13,248 pounds	1,293 16	
Sugar, crushed, 3,577 pounds	448 16	
Sugar, granulated, 531 pounds	65 70	
Sugar, powdered, 1,238 pounds	164 50	
Syrup, 607 gallons	372 15	
Tapioca, 45 pounds	3 50	
Tea, 664 pounds	263 30	
Vegetables	17 80	
Vermicelli, 9 boxes	12 95	
Vinegar, 224 gallons	44 79	
		$16,773 23
Salaries and Wages.		
Principal and teachers	$20,718 08	
Physician, Clerk, and Matrons	5,864 92	
Servants and services	7,690 21	
Gardener	719 00	
		$34,992 21
Amount carried forward		$51,765 44

Amount brought forward		$51,765 44
Clothing.		
Blacking and brushes	$24 58	
Boots and shoes	384 25	
Buttons, needles, pins, and trimmings	108 56	
Clothes brushes, 2½ dozen	6 00	
Combs, 4 dozen	5 63	
Dress goods	109 56	
Dressmaker	26 70	
Flannel	3 75	
Hats, 25	13 75	
Hose	22 15	
Knitting yarn, 6½ dozen.	5 75	
Machine oil	85	
Marking ink, 2 dozen	5 00	
Merino shirts and drawers	28 76	
Nail brushes, 1 dozen	2 50	
Neckties	6 83	
Pants	15 00	
Repairing boots and shoes	250 25	
Ribbon	60	
Rubber overshoes	13 00	
Rubber cloak, 1	2 50	
Scissors, 2 pair	1 25	
Shirts	46 78	
Shoe laces	4 15	
Skirts	13 29	
Suits clothes	351 25	
Suspenders, 3 dozen	8 00	
Tape	1 15	
Thread and silk	20 51	
Tarlatan	3 32	
Tooth brushes, 4 dozen	5 75	
Worsted	1 00	
		1,492 42
Furniture.		
Blankets	$183 81	
Brooms, corn, 25 dozen	104 23	
Brooms, wisp, 4½ dozen	9 78	
Barrel covers, 1 dozen	3 50	
Bedroom set, 1	104 50	
Baskets, 4	2 00	
Carpets and lining	61 00	
Carpet cleaning	119 12	
Carpet sweeper	4 50	
Chairs	12 00	
Cotton mops, 11 dozen	33 50	
Crockery, cutlery, and glassware	335 61	
Curtains	22 53	
Curtain goods for alcoves	81 27	
Desks	20 00	
Door mats, 1	75	
Dust brushes, 9 dozen	47 58	
Dust pans, 4 dozen	6 87	
Feather dusters, 11	37 60	
Kitchen hardware, etc	33 63	
Looking glasses	13 50	
Mattresses	205 50	
Mop handles, 1 dozen	2 25	
Mouse traps, 2	50	
Mosquito netting	3 15	
Matting	6 55	
Napkins	13 00	
Oil cloth	8 57	
Pails, 2 dozen	10 25	
Picture cord	50	
Pillows	20 50	
Paper and hangings	111 03	
Paper bags	3 37	
Quilts	10 00	
Range repairs	47 34	
Amounts carried forward	$1,679 78	$53,257 86

Amounts brought forward	$1,679 78	$53,257 86
Scales	13 50	
Shovels	4 45	
Shades	2 75	
Stoves	67 50	
Sponge	2 75	
Scrubbing brushes, 9 dozen	29 35	
Sheeting	10 12	
Table cloths	84 36	
Tables	37 00	
Towel rollers	8 00	
Towels	24 33	
Toweling	42 78	
Tinware and repairs	113 84	
Turkey red	7 12	
Window shades	26 06	
Wire cloth	8 53	
		2,162 23
Building and Repairs.		
Barbed wire	$27 44	
Belting	5 50	
Cement	3 50	
Copper wire	4 93	
Extra labor	88 75	
Grate bars	9 12	
Granite	5 00	
Glass and putty	69 17	
Hardware	375 28	
Hose	4 50	
House cleaning	40 00	
Lumber	401 42	
Millwork	22 00	
Paints, oils, and brushes	164 82	
Packing	1 25	
Plumbing and gasfitting	56 19	
Painting	720 05	
Plumbers' supplies	397 35	
Privy sink	35 00	
Pump	23 00	
Wages, carpenter	1,780 00	
		4,234 27
Fuel and Lights.		
Candles, 165 pounds	$22 85	
Coal, $315\frac{481}{2240}$ tons	3,314 50	
Coal oil, 190 gallons	60 50	
Cotton waste, 100 pounds	14 00	
Charcoal, 5 sacks	3 75	
Freight and cartage	114 10	
Forge	32 40	
Gasoline, 6,157 gallons	1,767 83	
Gas and lamp chimneys	47 75	
Lard oil, 22 gallons	14 00	
Matches, 4 tins	36 00	
Rubber packing, 10 pounds	2 80	
Steam pump	87 80	
Wages engineer	1,277 50	
Wicks	15	
		6,795 93
Laundry.		
Baskets	$21 43	
Bluing, 60 pounds	13 98	
Brushes, 2 dozen	7 80	
Sal soda, 2,330 pounds	46 15	
Soap, brown, 200 pounds	13 00	
Soap, powdered, 3,050 pounds	217 00	
Starch, 720 pounds	71 64	
Wages	1,746 53	
Washboards, 6	2 24	
Wax, white, 16 pounds	11 10	
		2,150 87
Amount carried forward		$68,601 16

Amount brought forward		$68,601 16
Stable and Dairy.		
Barley, ground, 14,480 pounds	$175 79	
Bran, 4,855 pounds	348 39	
Cattle	24 00	
Corn, cracked, 6,695 pounds	101 41	
Currycombs and brushes	5 65	
Cutting hay	32 63	
Farm implements	6 00	
Harness and repairs	59 15	
Hay, $69\frac{36}{100}$ tons	810 74	
Harness oil	8 75	
Manure	4 00	
Middlings, 4,025 pounds	54 15	
Milk pans	6 00	
Oats, 13,091 pounds	227 61	
Oilmeal cake, 1,450 pounds	21 65	
Pigs	19 50	
Repairing buggies	130 85	
Repairing wagon	27 50	
Sponges	1 60	
Straw, 60 bales	24 35	
Veterinary services	2 25	
Wages	1,395 00	
Whips	2 25	
Wheat	25 52	
		3,514 74
Miscellaneous.		
Advertisement	$0 75	
Blacksmithing	279 44	
Binding books	13 95	
Books, stationery, and school apparatus	500 71	
Cartage	56 94	
Car tickets	11 95	
Cash to pupils	85 95	
Carriage hire	31 50	
Closet paper	29 00	
Christmas expenses	27 29	
Diplomas	19 00	
Drugs and medicines	224 91	
Expense of Clerk to city	27 70	
Expense of pupils to and from school	501 30	
Express charges	93 90	
Extra labor	21 25	
Expense of pupils party	38 00	
Expense of picnics	19 25	
Expense of pupils to oculist	20 50	
Ferry	48 20	
Freight on supplies	307 29	
Fly paper	4 60	
Funeral expenses	40 00	
Horse keeping	44 50	
Hanging bell	9 00	
Ice	5 80	
Keys	50	
Knitting machine	25 00	
Leeches	1 50	
Music	16 48	
Printing	28 00	
Postage stamps	123 65	
Repairing clocks	75	
Repairing and tuning pianos	48 00	
Seeds and plants	37 80	
Subscription to "D. and D. Annals"	53 60	
Subscription to S. F. "Merchant"	6 00	
Speaking tubes, annunciator, etc	225 00	
Telegrams	94 35	
Telephones	71 95	
Twine	1 92	
Traveling expenses	141 80	
Amounts carried forward	$3,338 98	$72,115 90

Amounts brought forward	$3,338 98	$72,115 90
Ventilators	2 00	
Wrapping paper	4 55	
Wash for trees	1 30	
Water-wheel	182 18	
		3,529 01
Improvement Grounds.		
Blacksmithing	$8 17	
Cement	123 15	
Dump carts	141 00	
Fruit trees	105 30	
Granite coping	500 35	
Gravel	27 62	
Labor	3,081 00	
Lime	83 70	
Sand	69 50	
Sewer pipe	267 62	
Tile	64 25	
		4,471 66
Official Expenses.		
Interest, collection charges, etc.	$2,096 88	
Salary of Secretary and Treasurer	1,000 00	
		3,096 88
Overdraft on Voucher No. 3,221		35
Total		$83,213 80

TREASURER'S STATEMENT.

Receipts and Disbursements, Board of Directors, Institution for the Deaf and Dumb, and the Blind—General Fund.

	Thirty-second Fiscal Year.	Thirty-third Fiscal Year.	Total.
Receipts.			
July 1, 1880—Cash on hand			$24,499 26
From State Treasury:			
Appropriation for support	$27,000 00	$48,017 46	75,017 46
Appropriation for water	5,000 00		5,000 00
Appropriation for additional Home and Refectory	29,283 48		29,283 48
Appropriation for Educational building	5,000 00	38,262 17	43,262 17
Appropriation for furnishing expenses	2,500 00		2,500 00
Appropriation for heating apparatus	3,000 00	1,250 00	4,250 00
From pupils and miscellaneous sources	2,367 55	1,942 05	4,309 60
From advances on warrants		2,684 70	2,684 70
	$74,151 03	$92,156 38	
Total receipts			$190,806 67
Disbursements.			
Salaries and wages	$19,504 43	$15,487 78	$34,992 21
Supplies	16,871 66	23,781 39	40,653 05
Treasurer's salary	500 00	500 00	1,000 00
Miscellaneous expenses	641 28	1,455 60	2,096 88
Water account	217 00	2,433 12	2,650 12
Additional Home and Refectory	55,421 40		55,421 40
Educational building	7,378 79	35,883 38	43,262 17
Furnishing expense	464 77	1,544 41	2,009 18
Heating apparatus	850 00	3,400 00	4,250 00
Improvement of grounds	1,801 80	2,669 86	4,471 66
	$103,651 13	$87,155 54	
Total			$190,806 67

On hand, unpaid, Controller's Warrant No. 845, for June, 1882	$982 54
On hand, unpaid, Controller's Warrant No. 2,003, for balance of appropriation	3,000 00
Total	$3,982 54

DETAILED STATEMENT.

GENERAL FUND.

Receipts.	
Received from appropriation	$75,017 46
Received from pupils and miscellaneous sources	4,309 60
Total receipts, cash	$79,327 06
Disbursements.	
For deficiency June 30, 1880	$1,088 11
Salaries and wages	34,992 21
Supplies	40,653 05
Treasurer	1,000 00
Miscellaneous expenses	2,096 88
Improvement of grounds	4,471 66
Total disbursements	$84,301 91
Warrants on hand June 30, 1882, unpaid to credit of this Fund—	
No. 845	$982 54
No. 2,003	3,000 00
Total	$3,982 54

BUILDING ACCOUNTS.

Additional Home and Refectory.

Balance on hand June 30, 1882	$25,587 37
Received from miscellaneous sources	99 50
Received from appropriations	28,000 00
Received from Durham Fund	1,734 53
Total	$55,421 40

Disbursements.

For labor and materials	$55,421 40

Educational Building.

Received from appropriation	$40,000 00
Received from miscellaneous sources	664 94
Received from Durham Fund	2,597 23
Total	$43,262 17

Disbursements.

For labor and materials	$43,262 17

LIBRARY FUND.

July 1, 1880—Balance on hand	$2,695 54
Dividends received	287 02
From Shop and Improvement Fund	20 78
June 30, 1882—Balance on hand	$3,003 34

LOUIS STRAUS FUND.

June, 1881—Amount received	$5,000 00
Dividend and interest received	239 84
June 30, 1882—Balance on hand	$5,239 84

DURHAM FUND.

July 1, 1881—Balance on hand	$10,498 29
Interest and dividends received	5,359 03
Mortgage investment	30,000 00
	$45,857 32
Amount of "Durham Scholarships" paid	$1,029 16
Amount transferred to additional Home and Refectory	1,183 98
Amount of expense of W. Wilkinson—tour of observation	600 00
Amount transferred to Heating Apparatus Fund	1,250 00
Amount paid on account of Library Fund	73 55
Balance cash on hand	11,720 63
Mortgage investment on hand	30,000 00
	$45,857 32

ORGAN FUND.

June 30, 1880—Balance amount on hand	$1,108 45
Interest received	117 99
June 30, 1882—Balance on hand	$1,226 44

WATER FUND.

Received from appropriation	$5,000 00
Disbursed for labor and materials	$2,650 12
Balance cash on hand	2,349 88
	$5,000 00

H. A. PALMER, Treasurer.

June 30, 1882.

LIST OF PUPILS IN THE INSTITUTION SINCE JULY 1, 1880.

NAMES.	TOWNS.	COUNTIES.
Deaf and Dumb—Males.		
Aldersley, Lyell	Napa City	Napa.
Aronsohn, Martin	San Francisco	San Francisco.
Bassett, John	Sierra City	Sierra.
Best, Wm. C.	Napa City	Napa.
Billings, Chas. W.	Oakland	Alameda.
Black, Joseph F.	Pleasanton	Alameda.
Bucking, George F.	San Francisco	San Francisco.
Butler, Louis L.	Elko	Elko, Nevada.
Cator, Azro A.	West Berkeley	Alameda.
Christeen, Frederick W.	Benicia	Solano.
Christenson, Lewis O.	Hollister	San Benito.
Cohn, Max.	San Francisco	San Francisco.
Connelly, John	San Francisco	San Francisco.
Collischonn, Fred.	Oakland	Alameda.
Coulter, Charles B.	San Andreas	Calaveras.
Cushman, Ira D.	Georgetown	El Dorado.
DeWolf, Joseph	San Francisco	San Francisco.
Dickerson, Benjaman F.	Millville	Shasta.
Dinsmore, Bruce	Clipper Gap	Placer.
Dobner, Harry	San Francisco	San Francisco.
Dugan, Edward	Jainesville	Lassen.
Egan, William	San Francisco	San Francisco.
Ewing, William	Waitsburgh	Washington Territory.
Funkenstein, Leon	San Francisco	San Francisco.
Gee, William	Gibsonville	Sierra.
Goodrich, Doney H.	Volcano	Amador.
Grady, Theodore	San Francisco	San Francisco.
Gross, Charles A.	Stockton	San Joaquin.
Hannah, Andrew M.	Whitesboro	Mendocino.
Harding, Josh. G.	San Francisco	San Francisco.
Hatton, John S.	Napa City	Napa.
Heckman, Fred. W.	San Francisco	San Francisco.
Hill, Eldridge B.	Santa Barbara	Santa Barbara.
Hoke, Harmon A.	West Butte	Sutter.
Holman, Willis G.	Linden	San Joaquin.
Isert, Gustav.	San Francisco	San Francisco.
Johnson, James H.	Madison	Yolo.
Kaiser, George H.	Ophir	Placer.
Lake, Frank	Santa Cruz	Santa Cruz.
Lambert, Norman	Carpenteria	Santa Barbara.
Lewis, Beverly	Tracy	San Joaquin.
Lipsett, Robert A.	San José	Santa Clara.
Lohmeyer, Ed. W. F.	San Francisco	San Francisco.
Lynch, William H.	Paicines	San Benito.
McCarty, William E.	San Francisco	San Francisco.
McClure, William C.	Unionville	Humboldt, Nevada.
McCormick, Francis	Sonora	Tuolumne.
McQuillan, Charles	San Francisco	San Francisco.
Miller, Joseph	San Francisco	San Francisco.
Moesser, Geo. E.	Santa Ana	Los Angeles.
Oldham, William G.	Santa Rosa	Sonoma.
Olivas, Dolores	Santa Barbara	Santa Barbara.
O'Brien, Daniel	San Francisco	San Francisco.
O'Rourke, James P.	San Francisco	San Francisco.
Poyser, Harry	San Francisco	San Francisco.
Price, Edmund M.	Salinas City	Monterey.
Rahmstorf, George H.	Altamount Station	Alameda.
Raymond, Harry L.	Berkeley	Alameda.
Redman, William W.	Suisun	Solano.
Redmond, Grenville S.	San Jose	Santa Clara.
Reichsrath, Charles	Alameda	Alameda.
Rhorer, Joel N.	South Vallejo	Solano.

LIST OF PUPILS—Continued.

NAMES.	TOWNS.	Counties.
Rosenbaum, Nathan	San Francisco	San Francisco.
Saltenberger, George	San Francisco	San Francisco.
Sanguinetti, Antone	Columbia	Tuolumne.
Schilling, William	San Francisco	San Francisco.
Schlamm, Solomon	San Francisco	San Francisco.
Schleweck, Simon	San Francisco	San Francisco.
Schreiner, Henry	Freeport	Sacramento.
Selig, Isadore	San Francisco	San Francisco.
Selig, Kossuth	San Francisco	San Francisco.
Shaw, James H.	Salinas City	Monterey.
Shoaf, George A.	San Francisco	San Francisco.
Sievers, Charles	Stockton	San Joaquin.
Smith, Ellsworth	Riverside	San Bernardino.
Stewart, Francis F.	Wilmington	Los Angeles.
Stewart, James H.	Santa Ana	Los Angeles.
Sullivan, Torrence W.	San Francisco	San Francisco.
Taber, Henry W.	Gibsonville	Sierra.
Tripp, William H.	Stockton	San Joaquin.
Weidmuller, Charles H.	San Francisco	San Francisco.
Williams, Leo	San Francisco	San Francisco.
Willitts, Joshua M.	San Francisco	San Francisco.
Deaf and Dumb—Females.		
Ankener, Francis L.	Sacramento	Sacramento.
Awbrey, Eliza Bell	Red Bluff	Tehama.
Ayers, Dora	Santa Rosa	Sonoma.
Boothe, Meta M.	Pope Valley	Napa.
Botto, Orelia	Sutter Creek	Amador.
Bradley, Arrenia	Chico	Butte.
Bradley, Catherine	Chico	Butte.
Cohn, Celia	San Francisco	San Francisco.
Cole, Elizabeth D.	Oakland	Alameda.
Darling, Sarah F. J.	Bear Valley	Mariposa.
Decker, Delia	Chico	Butte.
DeFrees, Mary A.	Oakland	Alameda.
Degouy, Margueritte	St. Helena	Sonoma.
Doren, Theresa	San Pablo	Contra Costa.
Durkee, Mary L.	San Francisco	San Francisco.
Eades, Ida	Lookout	Modoc.
Emry, Francis E.	Poweltown	Butte.
Ford, Catherine	San Francisco	San Francisco.
Funkenstein, Paulina	San Francisco	San Francisco.
Gassagne, Adela	Los Angeles	Los Angeles.
Gerstle, Frederica E.	Louis	Lander, Nevada.
Gilbert, Angele	San Francisco	San Francisco.
Halloran, Maggie	Birds Landing	Solano.
Horrick, Lizzie	San Francisco	San Francisco.
Howell, Marcia C.	Poplar	Tulare.
Johnson, Lucy M.	San Francisco	San Francisco.
Kiddell, May G.	Sacramento	Sacramento.
Kuffel, Wilina E.	Bloomfield	Sonoma.
Ledden, Gertrude M.	San Francisco	San Francisco.
Leonard, Hattie E.	Oakland	Alameda.
Lewis, Josephine	Tracy	San Joaquin.
Lucas, Maggie	Woodland	Yolo.
Maury, Laura	San Leandro	Alameda.
McLaughlin, Sophie	San Rafael	Marin.
McTigue, Augusta	San Francisco	San Francisco.
Munson, Mary Elizabeth	Eureka	Humboldt.
Müth, Elizabeth	San José	Santa Clara.
Peralta, Mary	Lordsburgh	New Mexico.
Porter, Fannie E.	Turlock	Stanislaus.
Ross, Nellie	Napa City	Napa.
Schutz, Mathilda	San Francisco	San Francisco.
Sieferman, Louisa	Woodland	Yolo.
Sieferman, Emilie	Woodland	Yolo.

LIST OF PUPILS—Continued.

NAMES.	TOWNS.	Counties.
Thorpe, Charlotte C.	San José	Santa Clara.
Vallejo, Camila	Napa City	Napa.
Wallace, Gertrude	San Francisco	San Francisco.
Wardlow, Helen L.	San Francisco	San Francisco.
Warren, Annie	Wilmington	Los Angeles.
Wells, Sarah Z.	Sacramento	Sacramento.
Wright, Honora C.	San Francisco	San Francisco.
Blind—Males.		
Burkhardt, Frank R.	Marysville	Yuba.
Calvert, George	San Francisco	San Francisco.
Catoir, Jacob*	San Francisco	San Francisco.
Cooper, Frederick V.	East Portland	Oregon.
Dodds, Orrin	San Francisco	San Francisco.
Durham, John O.	San Francisco	San Francisco.
Foley, Dennis	San Francisco	San Francisco.
Hodgson, Joseph	Mariposa	Mariposa.
Jackson, Stephen	San Francisco	San Francisco.
John, Peter R.	Livermore	Alameda.
King, Frank J.	Alameda	Alameda.
Kleutsch, Frank J.	San Francisco	San Francisco.
Maduro, Joseph	San Francisco	San Francisco.
Martin, Clement P.	Vallejo	Solano.
Nagle, Harry M.	Oakland	Alameda.
Sedgwick, Thomas F.	Oakland	Alameda.
Smith, Cecil H.	Oakland	Alameda.
Staggs, William A.	Denverton	Solano.
Towle, William H.	San José	Santa Clara.
Weider, Daniel	Oakland	Alameda.
Blind—Females.		
Alderson, Clara C.	Oroville	Butte.
Clement, Catherine	San Francisco	San Francisco.
Dalton, Nellie	Vallejo	Solano.
Fennel, Annie	San Francisco	San Francisco.
Foley, Catherine	San Francisco	San Francisco.
Haggerty, Caroline	San Francisco	San Francisco.
Hardin, Nannie	Petaluma	Sonoma.
Levi, Nathalie	San Francisco	San Francisco.
Logan, Elizabeth O.	Penryn	Placer.
Madrid, Esperanza	Visalia	Tulare.
Mast, Augusta E.	San Francisco	San Francisco.
Mast, Emma L.	San Francisco	San Francisco.
Morrison, Margaret E.	Oakland	Alameda.
Morton, Lulie	Kingsbury	Fresno.
Mullany, Dorenda	San Francisco	San Francisco.
Penny, Ada	San Francisco	San Francisco.
Perrot, Ella	Oakland	Alameda.
Roth, Katie L.	Sacramento	Sacramento.
Tenney, Mary A.	Oakland	Alameda.

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* Drowned during vacation, August 13, 1882.

TERMS OF ADMISSION.

The California State Institution for the Deaf and Dumb and the Blind is located at Berkeley, about four miles north of the City of Oakland. Between San Francisco and Oakland a steam ferry plies almost every half hour in the day, and from the latter city a horse railroad is constructed, which lands passengers within easy walking distance of the Institution.

First—The Institution offers its benefits to all deaf and dumb or blind persons who are of age suitable for instruction, and who are of sound intellect, and free from vicious habits and contagious or offensive diseases.

Second—No charge is made for pupils from this State, except for clothing and traveling expenses.

Third—Pupils from other States or Territories are charged three hundred dollars per annum, payable quarterly in advance. No deduction is made from annual charge, on any account, except in cases of prolonged sickness.

Fourth—The session begins on the fourth Wednesday of August, and closes the second Wednesday of June. Parents are earnestly requested to enter, or return their children, promptly at the beginning of the term. Only in extreme cases will the pupils be permitted to leave before school closes.

Fifth—Pupils should be provided with comfortable clothing when they enter the Institution, and their wardrobe renewed twice a year.

Sixth—All moneys designed for pupils should be placed in the hands of the Principal, to whom, also, all letters of inquiry, etc., should be addressed.

Parents or guardians of applicants for admission, are requested to furnish written answers to the following questions:

1. What is the name of the applicant?
2. When and where was he born?
3. Is his deafness or blindness from birth; or is it from accident or disease? If so, at what age and from what cause did he become so?
4. Is his deafness or blindness total or partial? If the latter, what is the degree of hearing or sight?
5. Have any attempts been made to remove his deafness or blindness; and if so, what are the results?
6. Are there any other cases of deafness, blindness, insanity, or idiocy in the same family, or among the collateral branches of kindred? If so, how and when produced?
7. Was there any relation between parents or grandparents before marriage?
8. Has the child had the smallpox, scarlet fever, measles, mumps, whooping cough? Has he been vaccinated?
9. What are the names, nationality, occupation, residence, and Post Office address of parents?
10. What are the number and names of their children?

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REPORT

OF THE

COMMISSIONERS OF FISHERIES

OF THE

STATE OF CALIFORNIA,

FOR THE

YEARS 1881 AND 1882.

REPORT.

To his Excellency GEORGE STONEMAN, *Governor of California:*

The Commissioners of Fisheries of the State of California, appointed under an Act of the Legislature, entitled "An Act to provide for the restoration and preservation of fish in the waters of the State," approved April 2, 1870, respectfully submit their seventh report.

SACRAMENTO SALMON.

The marked increase in the demand for salmon by the canning establishments, arising from the growth and extension of that important industry, has induced the Commission to endeavor to increase the supply of this valuable fish, in order, if possible, to keep pace with the demand; and we now have the gratification of reporting the successful hatching and distributing, this season, of four millions of salmon in the waters of the State. The success of the artificial breeding of this fish which has attended our former efforts, has led us to believe that the Sacramento River may be made to produce an almost unlimited supply, and with this view of its capabilities, we have this season commenced the experiment of placing in that river and its tributaries double the number heretofore planted. If this large planting should give the same evidence of success in the increase of fish which the planting of former years has exhibited, it will go far towards encouraging the hope that the Sacramento River may be made a great "fish farm," from which may be supplied all the salmon that a largely increased business of the canning interests may require. That the artificial breeding of salmon has largely increased the run of fish in the river, is too clearly demonstrated in the increased production of the canning establishments, to admit of a doubt.

It will be seen, by referring to former reports, that the business of the canning of salmon has been as follows:

For the season ending August 1, 1875	5,098,781 pounds.
For the season ending August 1, 1876	5,311,423 pounds.
For the season ending August 1, 1877	6,493,563 pounds.
For the season ending August 1, 1878	6,520,768 pounds.
For the season ending August 1, 1879	4,432,250 pounds.

Now we come to the results, as we think reasonably indicated, of the artificial breeding.

It is a well settled fact that the reproduction of the salmon to its full size requires four years; consequently the "output" of 1880 is the first result of former planting. We now have the gratification of registering the increased production as follows:

For the season ending August 1, 1880	10,837,400 pounds.
For the season ending August 1, 1881	9,600,000 pounds.
For the season ending August 1, 1882	9,605,280 pounds.

This increase of production cannot reasonably be credited to an increase in the number of canning establishments, as it is well known that no such sudden and large increase of such facilities has taken place; nor can it fairly be attributed to chance runs of fish into the river. It is too regular and well sustained to be the result of accident.

In addition to the amount of salmon canned for export, it will be seen by the detailed report of transportation, that 6,713,408 pounds of salmon have been taken for home consumption. It may be well here to add that the above statistics are not mere estimates, but reliable information obtained from parties engaged in this business, and from registers of internal transportation.

The Commission has much satisfaction in being able to report that there now appears to exist a more harmonious feeling upon the necessity of preserving the fish in our rivers. During the year last past, from all the information we have, there has been exhibited, on the part of the conductors of the canning business, a fair and earnest desire to enforce the close season, and a commendable realization of the importance of preserving the fish from wasteful destruction, and allowing them to reach their breeding grounds in sufficient numbers. But still there has been a great deal of surreptitious violation of the laws by itinerant fishermen, whose depredations can only be prevented by the people in the immediate neighborhood assisting in enforcing the law; for it may here, we think, be pertinently remarked, that the "American citizen," whilst exhibiting the highest order of natural ability for the making of laws, seems to almost entirely overlook the fact that it is also his privilege and duty, individually, to aid in the enforcement of them. It has been frequently suggested to the Commissioners, that they ask the Legislature for an additional appropriation for the establishment of a "patrol police," to enforce the laws as against these desultory depredations. We cannot see the expediency of such an extravagance, for extravagance it would be. It would cost more to keep it up than any possible benefits derived from it. There is no actual necessity for large expenditure by this Commission, and the simpler and more economically it is conducted, the better will the State be served.

STRIPED BASS.

During the last year we have repeated the effort of introducing this valuable fish into the waters of the State, and we may add, this coast, for it is a sea-going fish, as well as an inhabitant of inland waters.

On the Eastern coast of the continent there is no other fish so highly valued. It is exceedingly prolific. It inhabits the fresh waters during all the Spring and Summer months, running in schools and taking the hook readily, and varying in weight from one to five pounds. When it takes on its sea-going form, it becomes a noble fish, reaching in weight from seventy to one hundred pounds, and still at even this great size, never losing its delicious flavor. We subjoin the report of Mr. J. G. Woodbury, the present Superintendent of the State Fishery, who made the trip East during the last Summer especially to bring out the striped bass, and whose success in the difficult task of bringing across the continent fish of so large a size will best illustrate his skill and care in so difficult an undertaking. It is hoped by the Commission that this importation will soon exhibit its results:

REPORT OF J. G. WOODBURY ON STRIPED BASS.

San Francisco, July 31, 1882.

S. R. Throckmorton, Esq., Chairman California Fish Commission:

Dear Sir: In accordance with your instructions to bring from the Atlantic Coast waters a lot of striped bass fry, for the purpose of stocking the waters of the Pacific Coast, I proceeded directly to Red Bank, New Jersey, which is on the Shrewsbury River, a few miles from the ocean, from whose tidal waters it was known that young bass could be conveniently caught, being the same place to which Mr. Livingston Stone had, on a former occasion, been directed by your Commission. I arrived at Red Bank on June twenty-seventh, and, with a letter of introduction, called upon Mr. G. H. Wild, the gentleman with whom you had been communicating in regard to the best season for catching young bass. Mr. Wild, who had previously interested himself in getting a permission from the New Jersey Fish Commissioners allowing the Shrewsbury River to be seined for the young bass we desired to obtain, now heartily lent his aid in securing men, boats, and seine to help catch the young fry. The next thing was to devise some means to keep the young bass in safety, as they were caught from day to day, and where they could be conveniently examined and fed if needful until the proposed number had been caught. For this purpose I adopted the suggestion you made to me before leaving San Francisco, which was to make a cage for them and anchor it in the current of the river. This cage was to be six feet long by three feet square (to suit the width of the wire), the bottom and top to be of boards, and the sides of galvanized wire to permit a free circulation of the water, the top to have a door for easy access. Mr. William E. Cole, a well known merchant of Red Bank, in his kindly interest in the success of our enterprise, insisted upon making this cage himself, which he did in a very satisfactory manner, thus giving me more time to devote to other urgent matters. You had written to Mr. Seth Green, Superintendent of the New York Fish Commission, to send a man experienced in catching and handling fish, and also a seine, to Red Bank, to meet me on my arrival from California. This gentleman (Mr. E. L. Marks), owing to some delay consequent on making a shipment of fish, did not reach Red Bank until the second day after my arrival. The seine which Mr. Green sent was too small to be of much use in the Shrewsbury, while the one I had secured in Red Bank was so much torn that nearly two days were consumed in repairing it. On the fifth day we had gotten the cage into the river and anchored it in a strong current, under the bridge; the seine had been repaired, and we made several hauls, catching about fifty fish. This was so encouraging that it led us to expect that the number of bass desired might be easily caught, although the fish were not so small as I had hoped. I now left Mr. Marks in charge of catching the bass, while I attended to other matters necessary to the success of our enterprise, such as getting cans made for transporting the fish to California, securing transportation passes in the baggage car over the railroads, etc. In New York I ordered made twelve cans like the New York Fish Commissioners' cans for transporting trout. These cans will hold about fourteen gallons each, and are made of the heaviest tin, strongly bound. The cans are so constructed as to give the largest possible air surface to the water, and they will be of good service to the Commission in the future. Three ten-gallon cans were also ordered for carrying extra water; they have wooden jackets, and are the same as those used by the United States Fish Commission in transporting young shad. Also, four strong pails for carrying water. These cans and pails were to be finished at a certain time, but owing to the Fourth of July intervening, and the warm spell which prostrated some of the workmen, they were not ready for delivery until a week after the time promised, consequently we were not able to start on our journey until several days after our fish had all been secured. Through the kindness of Professor Spencer F. Baird, United States Fish Commissioner, and his assistants, I received much practical information in relation to transporting fish on long journeys, and specially such as was pertinent to the trip I was about to begin. Professor Baird also kindly furnished me with free transportation passes for our outfit in the baggage cars over the different railroads.

While at Red Bank I had received a letter from you, with instructions to bring back some large eels for breeding purposes. I therefore went down to the eel-fishing grounds below Highlands, and near the mouth of Shrewsbury River, to make arrangements to have some caught and delivered at Red Bank a day before our departure for California with the striped bass.

As the striped bass was the first consideration, the floor space allotted to our use in the baggage car was all reserved for them. For carrying the eels I therefore proposed light boxes, so that they might be hung to hooks on the walls of the car over the fish cans. These boxes were similar to cheese hoops, with a bottom having holes in it for circulation of air, and a cover also having holes in it, which would drop loosely into the top of the box and find a resting place on lugs about two inches below the top. The two-inch space at the top was reserved for ice, so that, as it melted, the cold water would drip through upon the eels below. To the outer rim of the bottom was suspended a shallow tin dish to catch the dripping water, and so prevent the floor of the car becoming sloppy from this source. I knew that eels would live a long time if put in a cool place and their gills kept moist. With this fact in view, I arranged the boxes as above described, and intended putting the eels in boxes among eel grass, and to keep them moist by pouring over them, every few hours, a dipper full of waste water from the striped bass, and thus obviate the necessity of taking any extra water for the eels. To keep them cool, a small piece of ice placed on the cover to slowly melt and drip through on them would meet the requirements at little expense.

In consequence of the excessive hot weather, all the eels that were put into the cages died before we were ready to start with them. I therefore brought with me but ten eels (as an experiment), which were caught near our bass-fishing grounds on the night before our departure. These were put into a box as above described, and in addition to wetting them down three or four times during each twenty-four hours, and keeping a small piece of ice on the cover, they were every day given a bath for a few minutes in the waste water from the bass, which they seemed to enjoy hugely—the eel-grass being well rinsed and the box washed out. These eels were from twelve to twenty-four inches long. They all came through in fine condition, and were put into the bay near where the striped bass were planted, in water about a foot deep, on the edge of the tules. On being put into the water, they immediately bored straight down into the soft mud, and in a moment were all out of sight.

The weather had been excessively warm, raising the temperature of the water at times, where the fish were caught, to 84° Fahrenheit. When about three hundred had been secured, the fish being much larger than was anticipated, and some of them showing signs of distress on account of close confinement in such warm water, a second cage was built. The men continued fishing until July fourteenth, and, according to their count from day to day, had caught about six hundred, although all of this number were not in the cage when the fishing was discontinued, for some had died from bruises caused by careless handling, the temperature of the water causing the fungus to grow very rapidly where the scales had been rubbed off or discoloration produced from a bruise. Those that had been put into the first cage were supposed to be getting somewhat hungry after going without food for a week, therefore they were fed with some chopped liver, and their desire for food was so much stronger than their instinct of fear, that they eagerly rushed for the food as it was put into the water, even taking it from the hand as tame trout will often do. It was noticed that the bass in the second cage would not take food until they had been several days in confinement.

We now had all the fish we could carry in the space allotted to us in the car, and we only awaited the arrival of the cans from New York, which were promised to be ready for shipment on Saturday morning. Arrangements were made to start for home on Monday afternoon, July seventeenth. Mr. Marks, whom I had engaged to assist me in the care of the fish on the trip to California, was to see that the bass were gotten into the cars all right, so that we might start on the 4:55 P. M. train for Jersey City. While in an endeavor to get some eels to take along, I was obliged to be away until one o'clock of this, to us, important day, on a trip to Seabright and Parkerstown. Thirty-five of the larger bass were put into each of six cans, and forty of the smaller ones into each of the six other cans. These bass were from five to nine inches in length, and would average six and one half inches long. I had been advised by men experienced in handling fish to put no more than twenty-five in each can to take on such a long trip; but I knew that some of the weaker ones, with the best of care, would probably die, and being very anxious to get through with as many bass as possible, we had resolved to give them more than the usual amount of aeration and careful attention. It was decided to take the risk of the cans being somewhat crowded. The warm, brackish water of the Shrewsbury was used to fill the cans, and, after the fish were put in, the water was cooled down with ice. While the water was being cooled down, some of the bass showed signs of distress, and, while at the river bank, some of them died, perhaps twenty. At the railroad station, and before getting the cans on the cars, we lost about as many more. During the excitement of attending to the fish, paying bills, and seeing that all of our traps were put aboard, no one thought of counting the dead fish. Besides the twelve cans of fish, we had three cans of extra water and one box of eels; and with the ice, pails, aerating apparatus, and our own baggage, we took up considerable room in the car. Mr. J. A. Throckmorton, a prominent citizen of Red Bank, who had rendered us much assistance, and to whom I am indebted for many personal favors, also Mr. G. H. Wild, who, from the first, had been unremitting in his assistance, came to the station to wish good luck and bid us good-bye. I am also greatly indebted to Mr. William E. Cole for many kind favors. After the fish were on the train, we gave our whole attention to cooling down and aerating the water, which was soon lowered to about 60° Fahrenheit, at which temperature, a little above or below, we kept it all the way to the Pacific Coast.

On the way to Jersey City, and during a detention there of two hours to connect with the Pacific express train, twelve more of the bass died. During the night, some time after passing Philadelphia, two more were found dead, which made fourteen all told since leaving Red Bank. Most of these had shown signs of distress by occasionally turning on their sides. A considerable number of those picked out had either lost some of their scales or had contusions, and some had the "water-louse" fastened to their gills. These parasites were huge fellows, being about five eighths of an inch long and three eighths of an inch broad, and would no doubt have killed the fish sooner or later. During the next two days no more fish were lost. They appeared strong and lively until early in the morning of our arrival at Council Bluffs. I examined the cans, as had been our custom every few hours, and found the fish very lively in all the cans but one, in which were several dead fish. They were all taken out of the can and the water poured off, when at the bottom of the can was found a greenish-looking substance about the size of a lozenge, which would break like a piece of cheese. I think, perhaps, the fish may have nibbled from this mysterious substance and been poisoned. The next day, on drawing off the water from these fish and filtering it, there was found a soft, greenish, oozy matter, which may have passed through the fish. We could in no way account for this substance being in the can. From this can sixteen fish in all were lost before getting to Council Bluffs. On arriving at Council Bluffs the fish were left in charge of Mr. Marks to bring over to Omaha on the through train, while I crossed the river on the dummy train to make arrangements for our passes to San Francisco, and also get a requisition for ice at the stations between Omaha and Ogden. While waiting for the train to come along, Mr. Marks gave the fish a change of water from an artesian well. The water was clear and cold, appearing to be of the best quality. The fish soon showed signs of distress, and, with all the aeration he could give the water, ten of them died, and others were occasionally turning on their sides. Some said the water was alkaline; others said the water had been analyzed and no alkali was found. Artesian water is almost destitute of air. I have known carp, after being in it a few minutes, to lie as if dead at the bottom of the can, and after an energetic aeration of the water would become lively again. As soon as the train got over to Omaha, a change of Missouri River water was given them, and with continual aeration they soon showed signs of improvement. In Omaha twenty-five fish were thrown out dead, and during the next eighteen hours thirty-three more died, making the loss of bass, from the time of first putting them into the cans, about one hundred and forty. While at Omaha, I felt that we would be fortunate if we could keep any of the fish alive during the remaining five days of the journey, as, on putting the arm down into the roily water, the fish seemed to be either on their sides at the bottom of the cans or so sick that they would make no effort to escape from the hand. During the remainder of the journey of about three and one half days no more fish were lost; and, although this was the most dangerous part of the trip, on account of the alkaline water at most of the stations, the fish kept in splendid condition all the way through.

I desire here to express my deep sense of obligation to the General Manager of the Union Pacific Railroad at Omaha for his very generous act in furnishing free transportation for the fish over his road, and also for other personal favors extended. The success of our undertaking was largely due to the uniform courtesy of the railroad officials along the entire route.

The striped bass, a little over three hundred in number, were placed in brackish water at 61° Fahrenheit, at Army Point, in Suisun Bay. Mr. B. B. Redding met us at that place and assisted in depositing them into the water.

The water in the Shrewsbury River is brackish, indicating on the salinometer four degrees density. Taking this brackish water with us on the start, Turk Island salt was added to fresh water until about four degrees density, when we renewed the water in the cans. During the first night the salinometer was accidentally broken, and afterwards we had to salt the water to our taste. By some misunderstanding the quantity of salt taken from Red Bank was not what had been intended, and the supply getting short the water gradually became fresh again. In this condition the fish remained twenty days or more. But they seemed to do equally well in either fresh or brackish water. Mr. Marks took great interest in making the enterprise a success, working very faithfully, and cheerfully submitting to the inconvenience of obtaining sleep by short naps across the trunks in the baggage-car, so that we could relieve each other every two hours, and thus give the bass that almost constant attention they required. For aerating the water, which was done every fifteen to twenty minutes, we used an implement contrived by Mr. Munroe Green, of Mumford, New York. This was a cylinder about eighteen inches in length and six in diameter, having the bottom perforated with fine holes, and the top with a lid, and a handle to manipulate it. By letting it fill as it was slowly pushed nearly to the bottom, and then quickly pulling it to the top of the can, it gave it a fine shower of about one and a half gallons of almost perfectly aerated water. By having ice inside this aerator during the operation, we found it admirably adapted for quickly cooling the water. This is just the thing where small fish are being carried, thus avoiding the danger of crushing them by having loose ice in the can. This aerator gave better satisfaction than any other ever used by me.

Very respectfully,

J. G. WOODBURY.

CARP.

There has sprung up throughout the State an active interest in the cultivation of the carp, and the Commission has done everything in its power to meet the wishes of those embarking in the business. We are most opportunely aided just at this time by the generous expenditure and active efforts of the United States Fish Commissioner in sending to this coast a special car with a full corps of experts in charge of a large shipment of carp for distribution on this coast, and it gratifies us to be able to say that the arrangements for supplying persons desirous of cultivating and propagating this valuable fish are now in successful operation. The cultivation and propagation of this useful fish seem as yet scarcely understood by many who are disposed to embark in it. The carp is, in fact, to a great extent, a domesticated fish. It requires care and attention, and a proper preparation of conditions artificially. In fact, we are yet to be educated to the successful and cheap mode of propagating them. This will all come with time, and time only will bring it about, and no extravagant expenditure of money will very much hasten the result.

SHAD.

Since our last report we have received from the United States Fish Commissioner two hundred and twenty thousand eastern shad, which were placed in the Sacramento River above Tehama. These fish have doubtless added to the already increasing stock of shad on this coast, and we may now fairly congratulate ourselves upon the establishing of shad as an existing fact. They are now a food fish ready for consumption, and require the protection of the law.

There seems to have been some misinformation in regard to the proper season of taking them, on the part of some persons who have attempted to make laws for their protection.

The Commission has taken pains to correspond with Mr. Seth Green and the Commissions on the eastern coast, and find that the "close season" for shad on this coast should be from June fifteenth to March first, thus making the open season—during which it may be lawful to take them—from March first to June fifteenth in each year; and in addition, the taking should be forbidden at all times from Saturday night to Monday morning.

In presenting this report we must be allowed to state that it is, in some respects, the records of what may be called unfinished business. There is a great deal of matter before the Commission requiring immediate care and attention. The hatching and distributing season is at hand. We have in course of hatching five hundred thousand whitefish presented by the United States Fish Commissioner. These are to be distributed throughout the northern waters of the State.

The hatching and distribution of land-locked salmon and the distribution of carp will require much care and attention of the Commissioners.

In making up the account of receipts and disbursements, we have made, as usual, the close of the fiscal year the first of January. At that time the amount of cash on hand is chargeable with the outstanding amount of the cost of placing of four millions of salmon in the Sacramento River, the bill for which not having come to hand in time to be paid out of the funds on hand at that date. It will amount to the sum of two thousand dollars. This and the current expenses of the hatching-house, and distributions before us, will probably consume the balance of the funds of the Commission by the time the new appropriation will be available.

We hope that we need not now state that the Commissioners have practiced the closest economy in all the details of the business, but the work covers a great deal of ground and must be well and carefully conducted, and always by employés of knowledge and experience in the business. A whole hatching of eggs may be lost in a night, and carloads of fish may perish in a single hour of neglect or ignorance. The work must be done by those trained to it.

In closing this report it is proper to give some reason for the delay which has attended its delivery. In the death of our lamented associate, Mr. B. B. Redding, this Commission shares largely in the loss which the State and the cause of science, education, and development have suffered in the untimely passing away of this truly estimable gentleman. For more than twelve years he gave to the

Commission the fruits of his study and research, and to him, mainly, it is indebted for the standing it had attained amongst the similar associations of the United States.

The death of Mr. W. W. Traylor, soon after his appointment, deprived us of a colleague who bid fair to make an attentive and valuable officer; and the other vacancy, caused by the resignation of Mr. J. D. Farwell, one of the earliest and most useful appointees, have contributed to retard the bringing up to date the affairs of the Commission with more dispatch.

RECEIPTS AND EXPENDITURES.

The following is an account of receipts and expenditures since our last report:

Receipts.

January 3, 1881—By cash on hand, as per last report	$4,258 55
November 3, 1881—By cash returned from A. W. Von Schmidt	95 00
January 31, 1882—By cash appropriation	5,000 00
January 31, 1882—By cash Pit River fish ladder	70 50
May 16, 1882—By cash returned freight carp	12 00
July 20, 1882—By cash State appropriation	5,000 00
	$14,436 05

Expenditures.

January 14, 1881—To paid Woodbury	$20 00
January 15, 1881—To paid Marks	80 00
January 21, 1881—To paid Wells, Fargo & Co.'s Express on 250,000 whitefish eggs	16 70
January 27, 1881—To paid W. N. Lockington, trip to Sacramento and reading proof of report	26 00
January 31, 1881—To paid Lockington balance expense proof at Sacramento	24 00
February 1, 1881—To paid expressage on 100,000 whitefish eggs	16 50
February 1, 1881—To paid stove and pipe for hatching house	7 65
February 1, 1881—To paid copper, lock, shingles	1 90
February 1, 1881—To paid flannel	3 10
February 1, 1881—To paid staples and files	50
February 1, 1881—To paid Woodbury, balance labor, January	130 00
February 3, 1881—To paid telegram, Michigan and Tulare	3 50
February 11, 1881—To paid Richardson, expense of 100,000 whitefish in Donner Lake, and 10,000 in Presidio Lake	43 50
February 11, 1881—To paid expressage on 250,000 whitefish eggs, Michigan	38 55
February 11, 1881—To paid drayage	1 00
February 15, 1881—To paid telegrams, Washington and Michigan	5 40
February 15, 1881—To paid Richardson, one month's labor, January	100 00
February 15, 1881—To paid expressage on 100,000 whitefish, Donner Lake	40 25
February 24, 1881—To paid postage stamps	5 00
February 24, 1881—To paid expressage	50
March 8, 1881—To paid Hoehn & Co. money advanced for purchase of catfish; expressage on cans and fish, Lathrop and Alameda	43 85
March 8, 1881—To paid Woodbury one month's labor	150 00
March 8, 1881—To paid food for fish	40
March 13, 1881—To paid Wells, Fargo & Co. expressage on whitefish eggs and trout eggs	26 05
March 13, 1881—To paid telegram, Watsonville, etc.	2 25
March 15, 1881—To paid expense of trout, etc., to Alpine County	38 30
March 15, 1881—To paid telegram, Woodbury	50
March 24, 1881—To paid Stratton expressage on cans and fish	9 50
March 24, 1881—To paid expense of distributing trout, etc., Gilroy	4 30
March 24, 1881—To paid same, Tahoe	53 31
March 24, 1881—To paid two telegrams, Visalia	2 00
April 4, 1881—To paid Henry Pither, 100 catfish, San Mateo, and expressage	11 75
April 4, 1881—To paid 500 small catfish, San Diego	12 40
April 4, 1881—To paid 162 catfish, Alpine	16 00
April 4, 1881—To paid Richardson, two months' and four days' labor	212 00
April 6, 1881—To paid Richardson, expressage on trout to Tehachapi	39 05
April 6, 1881—To paid Richardson, L. L. salmon, San Mateo	3 24
April 6, 1881—To paid telegrams	1 00
April 8, 1881—To paid Woodbury, labor, one month to April 1	150 00
April 8, 1881—To paid milk, feed trout	1 25
April 8, 1881—To paid W. J. Stratton, expressage and drayage	6 50
April 8, 1881—To paid 425 pounds ice	9 25

April 13, 1881—To paid Dunn, expense of trout to Sonoma	$5 50
April 18, 1881—To paid Woodbury, in full for labor to the 15th	75 00
April 18, 1881—To paid telegram	70
April 18, 1881—To paid Stratton, expressage on cans	6 50
April 18, 1881—To paid feed for trout	1 60
April 18, 1881—To paid Wells, Fargo & Co., expressage on cans	1 95
May 3, 1881—To paid expressage on cans	2 80
June 23, 1881—To paid telegrams, Professor Baird	3 55
June 27, 1881—To paid John Merryman, witness in Chinese case at San Rafael	20 00
July 28, 1881—To paid H. C. Marks, services clerk account, 1881	100 00
August 16, 1881—To paid expenses of Johnson, witness in Chinese case at San Rafael	10 00
August 16, 1881—To paid self	1 75
August 8, 1881—To paid Neville & Co., seine for carp, sixty feet	35 00
August 8, 1881—To paid Woodbury, expenses of transporting carp from Alameda to Redwood	36 30
August 12, 1881—To paid Pither, 250 catfish, Walsh, Cloverdale	6 25
August 12, 1881—To paid Pither, 500 catfish, Radcliff, Watsonville	11 25
August 12, 1881—To paid Pither, 500 catfish, A. Benson, Beowawe	18 25
August 12, 1881—To paid Pither, 500 catfish, Morland, Healdsburg	14 00
August 12, 1881—To paid Pither, 400 catfish, Weller, Cascades	15 00
August 12, 1881—To paid 500 catfish, Weller, Cascades	13 50
August 28, 1881—To paid expressage on cans	1 50
August 28, 1881—To paid Woodbridge one month's salary to 22d	150 00
September 1, 1881—To paid L. Levy, witness in People vs. Blencke	10 50
September 4, 1881—To paid expenses in examination of Pit River fishway	70 50
September 22, 1881—To paid J. Caire, wire cloth	5 76
September 22, 1881—To paid freight on 200,000 salmon eggs	16 00
October 1, 1881—To paid freight on 200,000 salmon eggs	7 50
October 15, 1881—To paid Captain Farwell for removing obstruction in Alameda Creek	5 00
October 24, 1881—To paid telegram, Professor Baird, whitefish	2 00
October 24, 1881—To paid Sturtevant & Gray, food for carp	2 45
October 24, 1881—To paid flannel for screen	2 10
October 24, 1881—To paid copper wire	1 35
October 24, 1881—To paid Stratton, expressage	2 00
October 24, 1881—To paid tacks and fare	2 10
October 24, 1881—To paid Woodbury, salary to October 19	150 00
November 3, 1881—To paid Horton, transporting 20,000 salmon, Donner Lake	20 00
November 21, 1881—To paid W. G. Gifford, labor and expenses at hatchery, and distribution of salmon	54 70
November 21, 1881—To paid tin pipe and work	2 50
November 21, 1881—To paid steel, Pacific Saw Factory	2 00
November 21, 1881—To paid thermometer, salt, brush	1 25
November 21, 1881—To paid labor, drawing carp pond	2 25
November 21, 1881—To paid galvanized wire	2 53
November 21, 1881—To paid Stratton, express transportation of salmon	12 00
November 21, 1881—To paid Woodbury, one month, four days	170 00
November 21, 1881—To paid expenses and fare, Gifford, distributing salmon	23 85
November 26, 1881—To paid H. D. Dunn, distributing salmon, Pescadero, Redwood, and Russian River	10 00
November 29, 1881—To paid H. Pither, catfish, Sierra Valley and Monterey	41 50
December 3, 1881—To paid E. F. Preston, attorney for Superior Court, Hey Sing Yet vs. Anderson	105 40
December 8, 1881—To paid bill for ice, transporting fish	4 00
December 13, 1881—To paid Wells, Fargo & Co., transporting cans	2 50
December 19, 1881—To paid Wells, Fargo & Co., freight, trout eggs, New Hampshire	11 55
December 31, 1881—To paid L. Stone, 30,000 Eastern trout eggs	120 00
December 31, 1881—To paid packing	3 25
December 31, 1881—To paid draft	35
January 1, 1882—To paid Woodbury, labor half month to date	75 00
January 1, 1882—To paid Woodbury, expense to Taylorsville, fish-ladder	6 60
January 1, 1882—To paid Stratton, express, fish eggs	3 00
January 3, 1882—To paid Wells, Fargo & Co., express, whitefish eggs	52 80
January 31, 1882—To paid L. Stone, for hatching 2,000,000 salmon	1,000 00
February 2, 1882—To paid express, 250,000 whitefish eggs, Michigan	28 00
February 2, 1882—To paid Mullen, to San Leandro for fish	2 00
February 8, 1882—To paid half month labor to January 15	50 00
February 13, 1882—To paid Knowles & Co., syphon and aerator	2 75
February 13, 1882—To paid Stratton, express, fish and cans to January 13	11 50
February 13, 1882—To paid Woodbury, expenses with carp to Stockton	9 55
February 13, 1882—To paid Woodbury, labor one month to February 1	150 00

February 13, 1882—To paid J. Caire, wire cloth	$4 08
February 13, 1882—To paid Richardson, half month labor to February 1	50 00
February 13, 1882—To paid Palmer & Sons, 50,000 Eastern trout	125 00
February 13, 1882—To paid Pither, 500 catfish and express	14 50
February 15, 1882—To paid draft, Palmer Sons	50
February 15, 1882—To paid Wells, Fargo & Co., transporting trout and whitefish	35 55
February 15, 1882—To paid Wells, Fargo & Co., transporting trout and whitefish	40
February 23, 1882—To paid express, transporting 1,000 whitefish, Clear Lake	46 10
February 23, 1882—To paid 80,000 whitefish, Donner Lake	51 30
February 23, 1882—To paid 60,000 whitefish, Clear Lake	31 55
March 2, 1882—To paid dispatch, Carson	75
March 2, 1882—To paid express	50
March 3, 1882—To paid J. B. Campbell, 15,000 trout eggs	60 00
March 6, 1882—To paid Stratton, express, trout eggs	3 00
March 6, 1882—To paid express, Mullen, 50 cents; transporting trout, Monterey, $3 85	4 35
March 6, 1882—To paid sheet tin, $1; Woodbury, labor one month, $1 50	150 00
March 10, 1882—To paid Wells, Fargo & Co., L. L. salmon eggs, Maine	10 20
March 10, 1882—To paid Wells, Fargo & Co., San Leandro	1 00
March 10, 1882—To paid telegram, Boca	50
March 10, 1882—To paid shrimps, etc., fish food, $2 50; messenger, 50 cents	3 00
March 26, 1882—To paid Woodbury, account	20 00
April 3, 1882—To paid Stratton, Whitefield and L. L. salmon expressage to cars	4 00
April 3, 1882—To paid drawing carp pond labor	2 50
April 3, 1882—To paid Woodbury, balance labor, March	130 00
April 3, 1882—To paid drayage	60
April 9, 1882—To paid McDonald, trout, Prosser Creek	3 75
April 15, 1882—To paid Wells, Fargo & Co., expressage on fish cans	3 90
April 15, 1882—To paid drayage on cans, etc.	2 00
April 15, 1882—To paid Richardson, labor, February seventeenth	100 00
April 21, 1882—To paid March first, expressage and labor for transportation of 100,000 whitefish to Tahoe via Carson, and 10,000 Eastern trout, and distributing in Truckee, Little Truckee, P. Creek, D. Lake, S. Valley and Cisco	60 55
April 21, 1882—To paid April seventh, transportation of 3,000 L. L. salmon and 6,000 Eastern trout to P. Creek and Truckee, and 1,500 Eastern trout and 1,500 California trout to Nevada	33 70
April 21, 1882—To paid April seventeenth, transportation of 4,500 Eastern trout, 2,500 L. L. salmon, Blue Lakes, Lake County	10 40
April 21, 1882—Richardson, labor, one month	100 00
May 1, 1882—To paid Woodbury, expressage, fare, and telegram	3 85
May 1, 1882—Fare to Watsonville	2 90
May 1, 1882—Fish food	2 00
May 1, 1882—Woodbury, labor, one month	150 00
May 1, 1882—Stratton, expressage on fish cans	8 00
May 3, 1882—To paid Hoehn, ice	2 34
May 12, 1882—To paid Wells, Fargo & Co., distributing carp	44 25
May 15, 1882—To paid telegram	50
May 16, 1882—To paid fare and expense Taylorsville fish-ladder	3 20
May 16, 1882—To paid Richardson, labor for April	100 00
May 16, 1882—To paid fares to San José and San Leandro	4 10
May 20, 1882—To paid telegram, Sacramento	60
May 24, 1882—To paid bill of ice for fish	12 55
May 25, 1882—To paid H. C. Marks, labor copying notices, writing letters, etc.	50 00
May 25, 1882—To paid Woodbury, labor	50 00
May 25, 1882—To paid telegram	50
June 1, 1882—To paid feed for fish, fare to San José, etc.	8 15
June 1, 1882—To paid Woodbury, balance for labor for May	100 00
June 1, 1882—To paid turpentine, wire cloth, etc.	4 81
June 1, 1882—To paid Stratton, expressage, $9; Wells, Fargo & Co., $2 55	11 55
June 1, 1882—To paid expense Taylor trial, San Rafael	4 60
June 7, 1882—To paid Richardson, labor one month and five days, to June fifth	119 00
June 7, 1882—To paid fare, expressage on 15,000 Eastern trout to south fork of Yuba and north fork of American	32 95
June 8, 1882—To paid telegram, Woodbury	1 00
June 12, 1882—To paid Woodbury, ten days' labor, July	50 00
June 12, 1882—To paid for distributing fish, $3 25; Stratton, expressage, $3	6 25
June 12, 1882—To paid two telegrams	1 50
July 21, 1882—To paid Pither, catfish M. Gray, San Diego and Arizona	12 50
July 21, 1882—To paid, 1,000, Farwell, Alameda	24 50
July 21, 1882—To paid to H. C. Marks, labor copying, writing, etc.	50 00
June 14, 1882—To paid expense suit People vs. Taylor	2 00
June 14, 1882—To paid Wells, Fargo & Co., expressage on eggs from Redding	7 70

June 14, 1882—To paid Woodbury, account of striped bass from New Jersey		$800 00
June 14, 1882—To paid S. I. Co., bill ice		2 25
July 23, 1882—To paid telegram, Woodbury		1 50
July 23, 1882—To paid telegram, Woodbury		25
July 23, 1882—To paid telegram, Throckmorton		45
July 23, 1882—To paid drayage labor, striped bass		2 10
July 26, 1882—To paid Woodbury, account of expressage on striped bass		80 00
July 26, 1882—To paid Woodbury, account of expressage on striped bass		60 00
July 29, 1882—To paid Woodbury, balance expense of $946 47, for transportation of striped bass		6 47
July 29, 1882—To paid Stratton, expressage on cans		2 00
July 31, 1882—To paid H. C. Marks, labor to July first		50 00
August 4, 1882—To paid W. A. Gift, expenses of arrest, People vs. J. Benson		25 00
August 13, 1882—To paid Hoehn, ice, May third		2 34
August 13, 1882—To paid Hoehn, ice, June twenty-third		2 25
December 5, 1882—Bill of Stafford & Dugan, for horse and buggy to fish pond, and carp		3 00
December 5, 1882—Bill of Tubbs & Co., piece 1¾ Manila rope		4 00
December 5, 1882—Bill of Thomas Driver, one can paint		60
December 5, 1882—Bill of H. C. Marks, clerical services		50 00
December 5, 1882—Bill of Wengola, for material and work on seine, 180 feet long		35 50
December 5, 1882—Bill of Armes & Dallam, forty-one pounds of netting		32 80
December 5, 1882—Bill of George R. Jackson, for services in making statistics of salmon, sturgeon, etc., transported to San Francisco, Sacramento, and Stockton, September 1, 1880, to August 1, 1882		67 50
December 5, 1882—Bill of J. G. Woodbury:		
August third, express charges to Washington	$ 60	
August twenty-second, fare to Oakland	90	
August twenty-fifth, fare to San Leandro	50	
August thirtieth, fare to Redwood City	50	
October twenty-sixth, fare to San Leandro	80	
Shipping tags	10	
November first, services for one third of a month	50 00	
		54 75
December 5, 1882—Bill of J. G. Woodbury:		
November eighteenth and nineteenth, fare to San Leandro	$ 50	
Hotel expenses	50	
November twenty-third, Fare to San Leandro	80	
November twenty-seventh, fare to Redwood City	1 85	
November twenty-seventh, stage fare to Burr's pond	75	
November twenty-seventh, expressage on seine	1 00	
November twenty-seventh, freight, cans, etc.	1 00	
December first, services, November 18 to December 1	60 00	
		66 40
December 7, 1882—Freight on fish cans		1 35
January 3, 1883—Bill of J. G. Woodbury:		
December twenty-fourth, cash for staples for baskets	$ 30	
January first, salary for one half month to date	75 00	
		75 30
January 3, 1883—Bill of A. D. Oakley:		
One stencil	$ 1 45	
One set tags	75	
Ink and brush	50	
		2 70
January 3, 1883—Bill of E. M. Derby & Co., for lumber		10 13
January 3, 1883—Bill of C. H. Gray, brush, nails, etc		1 10
January 3, 1883—Bill of Thomas Driver, one dining table		3 75
January 3, 1883—Bill of Smalley & Stratton, for hauling		4 00
January 3, 1883—Bill of California Wire Works		5 04
January 3, 1883—Bill of Cunningham, Curtiss & Welch, stationery		4 25
January 3, 1883—Bill for telegrams		15 30
January 3, 1883—Expressage on fish cans		6 00
		$7,559 51
Cash on hand to balance		6,876 54
		$14,436 05

The balance on hand of $6,876 54 stands charged with the outstanding amount of $2,000, payable for placing four millions of salmon in the Sacramento River, as before stated, after which the remaining

$4,876 54 will be required and consumed in distributing the productions of the State Hatchery throughout the State, and the importation of Eastern fish.

S. R. THROCKMORTON,
Chairman of Fish Commission.

APPENDIX "A."

Memorandum Statement, showing Fresh Salmon received at San Francisco from September 1, 1880, *to August* 1, 1882.

	Boxes.	Loose.
1880—September	997	20,244
October	621	8,560
November	118	3,369
December	150	9,621
	1,886	41,794
Boxes will average eight fish per box; total, 56,882 fish. Estimated at 13 pounds each, or say in season, 739,466 pounds.		
1881—January	140	4,210
February	114	5,823
March	138	6,431
April	2,965	25,391
May	5,384	10,383
June	1,939	2,414
July	993	3,813
September	10,054	60,853
October	1,526	2,932
November	443	1,086
December	577	2,906
	24,273	126,242
Total, 320,426 fish; estimated at 13 pounds each, or say in season, 4,165,538 pounds.		
1882—January	579	2,734
February	341	4,746
March	853	16,576
April	2,238	9,708
May	2,967	2,247
June	1,608	1,876
July	1,585	5,128
	10,171	43,015
Total	36,320	211,051
Total, 124,383 fish; estimated at 13 pounds each, or say in season, 1,616,979 pounds.		
Grand total, 501,691 fish.		

Memorandum Statement, showing amount of Fresh Salmon received at Sacramento from September 1, 1880, *to August* 1, 1882.

	Loose.	Boxes.
1880—September	203	2
October		7
November	184	4
December	635	1
	1,022	14
Total, 1,134 fish; estimated at 13 pounds each, or say in season, 14,742 pounds.		
1881—January	107	3
February	42	65
March	143	50
April	100	53
May		10
June		
July		
August		
September		
October		18
November	34	49
December	92	39
	518	287
Total, 2,814 fish; estimated at 13 pounds each, or say in season, 36,582 pounds.		
1882—January	39	49
February	64	28
March	168	136
April	83	73
May	103	776
June		214
July	130	
	579	1,276
Total, 10,777 fish; estimated at 13 pounds each, or say in season, 140,101 pounds.		

Memorandum Statement, showing amount of Fresh Sturgeon received at San Francisco from September 1, 1880, *to August* 1, 1882.

1880—September	588
October	237
November	160
December	433
Total	1,418
Estimated at 50 pounds each, or say in season, 70,900 pounds.	
1881—January	185
February	315
March	320
April	870
May	453
June	172
July	214
August	1,809
September	606
October	186
November	220
December	171
Total	5,821
Estimated at 50 pounds each, or say in season, 291,050 pounds.	

1882—January	146
February	356
March	846
April	409
May	70
June	102
July	875
August	2,230
Total	5,034

Estimated at 50 pounds each, or say in season, 251,700 pounds.

Memorandum Statement showing Miscellaneous Receipts of Fish as under at San Francisco from September, 1880, *to August*, 1882.

	Baskets.	Barrels.	Mats.	Sacks.
1880—September	21	36	1	8
October	25	3	1	41
November	45	21	------	33
December	200	------	------	46
	291	60	2	128
26 boxes smoked salmon, 9,000 pounds.				
1881—January	180	61	------	31
February	251	9	------	4
March	84	20	------	1
April	22	16	------	3
May	9	9	------	------
June	14	6	------	16
July	4	10	------	------
August	4	14	------	------
September	31	43	------	354
October	20	14	------	4
November	66	33	------	18
December	201	26	------	20
	886	261	------	451
11 boxes smoked salmon, 3,500 pounds.				
1882—January	84	5	------	5
February	65	6	------	1
March	169	45	------	22
April	27	32	------	9
May	12	1	------	------
June	9	3	------	2
July	3	18	------	------
	369	110	------	39
Totals	1,546	431	2	618

Barrels are dried fish, and weigh 200 pounds each. Sacks are small fresh fish, and weigh 75 pounds each. Baskets are China and contain both fresh and cured fish, and weigh 100 pounds each.

DISTRIBUTION OF FISH.

January 31, 1880—500 catfish sent to J. B. Still, for Eel, Salt, and Mad Rivers, Humboldt County, California.
February 7, 1880—15,000 Eastern trout, placed by Richardson in Merced and Yosemite.
February 20, 1880—300 catfish sent to J. E. Still, Eureka, Humboldt County.
March 19, 1880—1,000 Eastern trout sent to Almshouse Pond, San Francisco, California.
March 20, 1880—2,000 Eastern trout sent to Donner Lake outlet.

March 20, 1880—6,000 Eastern trout sent to Independence Lake and Little Truckee.
March 20, 1880—8,000 Eastern trout sent to South Yuba, Truckee.
March 29, 1880—500 Eastern trout sent to Woodward's Gardens.
April 2, 1880—1,000 Eastern trout sent to Laguinetas Creek, Marin.
April 7, 1880—2,000 McCloud River trout sent to Laguinetas Creek, Marin.
April 4, 1880—2,000 Eastern trout, Soda Springs, South Yuba.
April 4, 1880—6,000 Eastern trout, Sierra Valley, Feather River.
April 12, 1880—10,000 McCloud River trout to Carmel, Monterey, Salinas Valley, and Santa Cruz streams.
April 28, 1880—10,000 McCloud River trout sent to Tuolumne and Merced (lost).
May 1, 1880—8,000 McCloud River trout sent to streams in San Mateo, Monterey, and Santa Cruz.
May 3, 1880—2,000 McCloud River trout sent to streams in Santa Clara.
June 7, 1880—500 catfish to Smith & Terry, for Stockton.
June 7, 1880—500 catfish to J. K. Vail, for Forbestown.
June 7, 1880—2,000 catfish to A. C. Bassett, for Monterey, Pajaro, etc.
June 7, 1880—500 catfish to J. W. Wright Johnson, for Bellota.
June 12, 1880—1,000 catfish to A. B. Carlock, for Siskiyou (lost).
June 21, 1880—500 catfish to J. C. Smith, for Stockton.
June 30, 1880—12 carp sent to Commissioner E. R. Calhoun, for Mare Island.
July 17, 1880—500 catfish to C. Brown, for Merced.
July 17, 1880—1,000 catfish to A. B. Carlock, for Siskiyou (lost).
July 21, 1880—500 catfish to J. H. Maynard, for San Mateo Creek.
August 2, 1880—500 catfish to W. McLaughlin, *for* Amador.
September 2, 1880—500 catfish (large) to S. B. Weller, Cascade Lakes, Placer.
October 21, 1880—500 catfish to E. R. Shimmin, for Eel River (Little Lake).
November 1, 1880—500 catfish to Charles Mansfield, Merced, for Sloughs, San Joaquin.
November 2, 1880—250 catfish to E. Steele, for Yreka.
January 24, 1881—100 catfish to Lux, for San Mateo County.
February 5, 1881—100,000 whitefish sent to Tulare Lake.
February 11, 1881—10,000 whitefish sent to United States Marine Hospital, Presidio.
February 12, 1881—10,000 whitefish sent to Lake Merced.
February 12, 1881—10,000 whitefish sent to lakes in Marin County.
February 16, 1881—100,000 whitefish deposited in Donner Lake.
February 21, 1881—500 catfish sent to Foster, for San Diego County.
March 2, 1881—4,000 landlocked salmon to Alpine County.
March 2, 1881—162 catfish to Alpine County.
March 16, 1881—1,000 McCloud River trout to E. H. Farmer, for Gilroy.
March 16, 1881—1,000 McCloud River trout to R. D. Arricks, for Gilroy Hot Springs.
March 16, 1881—1,000 McCloud River trout to W. R. Radcliff, for Santa Cruz.
March 16, 1881—1,000 landlocked salmon to W. R. Radcliff, for Santa Cruz.
March 16, 1881—1,000 McCloud River trout to H. S. Ball, for Salinas.
March 16, 1881—1,000 landlocked salmon to H. S. Ball, for Salinas.
March 16, 1881—200 catfish to D. Benson, Beowawe.
March 18, 1881—200 catfish to Dr. Webber, for Sierra Valley.
March 18, 1881—4,000 McCloud River trout to E. D. Parks, Sumner, Tehachapi.
March 18, 1881—3,000 McCloud River trout to R. A. Campbell, for Cisco.
March 18, 1881—3,000 McCloud River trout to J. B. Brogan, for Prosser Creek.
March 18, 1881—5,000 landlocked salmon to J. B. Campbell, for Tahoe City.
March 18, 1881—2,000 landlocked salmon to J. F. Moody, for Donner Lake.
March 18, 1881—4,000 landlocked salmon to J. B. Brogan, for Prosser Creek.
March 18, 1881—2,000 landlocked salmon to Colkins & Sons, for Nevada City.
March 25, 1881—300 landlocked salmon to Mt. View Lake, Presidio.
March 25, 1881—200 trout to Mt. View Lake, Presidio.
March 25, 1881—200 trout to Woodward's Gardens.
March 25, 1881—500 whitefish to Shafter, for Marin County.
March 25, 1881—100 landlocked salmon to Shafter, for Marin County.
March 25, 1881—200 trout to Shafter, for Marin County.
March 25, 1881—1,000 trout to E. P. Converse, for Tulare.
March 25, 1881—4,000 trout to E. D. Parks, Sumner, for Kern County.
April 4, 1881—200 landlocked salmon to San Mateo, San Andreas.
April 4, 1881—500 landlocked salmon to Mt. View Lake, San Francisco.
April 7, 1881—4,000 trout to Sonoma Creek.
October 27, 1881—20,000 salmon to San Leandro, Grass Valley, and creeks in Alameda.
November 2, 1881—10,000 salmon to Almshouse, San Francisco.
November 3, 1881—15,000 salmon to Pescadero Creek.
November 4, 1881—8,500 salmon to Petaluma Sportsmen's Club.
November 5, 1881—10,000 salmon for Prosser Creek and Truckee.
November 5, 1881—10,000 salmon for Donner Lake.
November 6, 1881—15,000 salmon for Russian River.
November 9, 1881—15,000 salmon for San Gregorio.
November 9, 1881—2,000 salmon for Woodward's Gardens.

November 14, 1881—15,000 salmon to Skaggs' Springs.
November 18, 1881—15,000 salmon to Santa Cruz and Monterey.
November 18, 1881—15,000 salmon to Salinas and Gilroy.
November 24, 1881—2,270,000 salmon deposited in McCloud, Pit, Sacramento Rivers, and Salt Creek.
November 26, 1881—500 catfish sent to Monterey.
November 26, 1881—1,000 catfish sent to Sierra Valley.
January 7, 1882—39 old carp, 32 young carp of 1881 spawn, deposited with W. L. Overheiser, Stockton, to be bred on shares.
February 10, 1882—500 catfish sent to C. Warfield, for Fresno.
December 16, 1882—Completed the placing of four millions of young salmon in the headwaters of the Sacramento River.

LIST OF FISH COMMISSIONERS.

DOMINION OF CANADA.

W. F. Whitcher, Commissioner .... Ottawa, Ontario

PROVINCE OF NEW BRUNSWICK.

W. H. Venning, Inspector of Fisheries .... St. John

PROVINCE OF NOVA SCOTIA.

W. H. Rogers, Inspector .... Amherst

PROVINCE OF PRINCE EDWARD ISLAND.

J. H. Duvar, Inspector .... Alberton

PROVINCE OF BRITISH COLUMBIA.

A. C. Anderson .... Victoria

THE UNITED STATES.

Prof. Spencer F. Baird .... Washington, District of Columbia

ALABAMA.

C. S. G. Doster .... Prattville
D. B. Huntley .... Courtland

ARIZONA.

John J. Gosper .... Prescott
Richard Rule .... Tombstone
Dr. J. H. Taggart, Business Manager .... Yuma

ARKANSAS.

John E. Reardon .... Little Rock
James H. Hornibrook .... Little Rock
H. H. Rottaken .... Little Rock

CALIFORNIA.

S. R. Throckmorton .... San Francisco
A. B. Dibble .... Grass Valley, Nevada County
B. H. Buckingham .... Washington, Yolo.

COLORADO.

Wilson E. Sisty .... Idaho Springs

CONNECTICUT.

Dr. Wm. M. Hudson .... Hartford
Robert G. Pike .... Middletown
George N. Woodruff .... Sherman

DELAWARE.

Enoch Moore, Jr. .... Wilmington

GEORGIA.

J. T. Henderson, Commissioner of Agriculture, and ex officio Commissioner of Fish and Fisheries	Atlanta
Dr. H. H. Cary, Superintendent	La Grange

ILLINOIS.

N. K. Fairbank, President	Chicago
S. P. Bartlett	Quincy
S. P. McDoel	Aurora

INDIANA.

Calvin Fletcher	Spencer, Owen County

IOWA.

B. F. Shaw	Anamosa
A. A. Mosher, Assistant	Spirit Lake

KANSAS.

Hon. D. B. Long	Ellsworth

KENTUCKY.

William Griffith, President	Louisville
Hon. John A. Steele	Versailles
Dr. Wm. Van Antwerp	Mount Sterling
A. H. Goble	Catlettsburg
Hon. C. J. Walton	Munfordville
Dr. S. W. Coombs	Bowling Green
John B. Walker	Madisonville
P. H. Darby	Princeton
Hon. J. M. Chambers	Independence, Kenton County
W. C. Price	Danville

MAINE.

E. M. Stilwell	Bangor
Henry O. Stanley	Dixfield

MARYLAND.

Thomas Hughlett	Easton
G. W. Delawder	Oakland

MASSACHUSETTS.

E. A. Brackett	Winchester
Asa French	South Braintree
F. W. Putnam	Cambridge

MICHIGAN.

Eli R. Miller	Richland
A. J. Kellogg	Detroit
Dr. J. C. Parker	Grand Rapids

MINNESOTA.

First District—Daniel Cameron	La Crescent
Second District—Dr. Wm. M. Sweney	Red Wing
Third District—Dr. Robert Ormsby Sweeny	St. Paul
Fourth District—No appointment until January.	
Fifth District—No appointment until January.	

MISSOURI.

Dr. J. G. W. Steedman, Chairman	2803 Pine St., St. Louis
John Reid	Lexington, Lafayette County
Dr. J. S. Logan	St. Joseph

NEBRASKA.

W. L. May	Fremont
R. R. Livingston	Plattsmouth
B. E. B. Kennedy	Omaha

NEVADA.

Hon. Hubb G. Parker	Carson City

NEW HAMPSHIRE.

George W. Riddle	Manchester
Luther Hayes	Milton
Albina H. Powers	Grantham

NEW JERSEY.

Dr. Benjamin P. Howell	Woodbury
Major Edward J. Anderson	Trenton
Theodore Morford	Newton

NEW YORK.

Hon. R. Barnwell Roosevelt	76 Chambers St., New York
Edward M. Smith	Rochester
Richard U. Sherman	New Hartford, Oneida County
Eugene G. Blackford	Fulton Market, New York City; 809 Bedford Avenue, Brooklyn

NORTH CAROLINA.

S. G. Worth	Raleigh

OHIO.

Col. L. A. Harris, President	Cincinnati
Charles W. Bond, Treasurer	Toledo
Halsey C. Post, Secretary	Sandusky

PENNSYLVANIA.

Hon. H. J. Reeder	Easton
Hon. B. L. Hewit	Hollidaysburg
James Duffy	Marietta
John Hummel	Selingsgrove
Robert Dalzell	Pittsburg
G. M. Miller	Wilkesbarre

RHODE ISLAND.

Alfred A. Reed	Providence
Newton Dexter	Providence
John H. Barden	Rockland

SOUTH CAROLINA.

A. P. Butler, Commissioner of Agriculture and ex officio of Fish and Fisheries	Columbia
C. J. Huske, Superintendent	Columbia

TENNESSEE.

W. W. McDowell	Memphis
H. H. Sneed	Chattanooga
Edward D. Hicks	Nashville

TEXAS.

R. R. Robertson	Austin

UTAH.

No appointment since the death of Prof. J. L. Barfoot, in April last.

VERMONT.

Hiram A. Cutting	Lunenburg, Essex County
Herbert Brainerd	St. Albans

VIRGINIA.

Col. M. McDonald	Berryville

WEST VIRGINIA.

Henry B. Miller, President	Wheeling
C. S. White, Secretary	Romney
N. M. Lowry	Hinton

WISCONSIN.

The Governor, ex officio	Madison
Philo Dunning, President	Madison
C. L. Valentine, Secretary and Treasurer	Janesville
J. V. Jones	Oshkosh
John F. Antisdel	Milwaukee
Mark Douglas	Melrose
Christopher Hutchinson	Beetown

WYOMING TERRITORY.

Dr. M. C. Barkwell, Chairman and Superintendent	Cheyenne
Otto Gramm, Secretary	Laramie
Hon. N. L. Andrews	Johnson County
Hon. E. W. Bennet	Carbon County
Hon. P. J. Downs	Uinta County
Hon. T. W. Quinn	Sweetwater County